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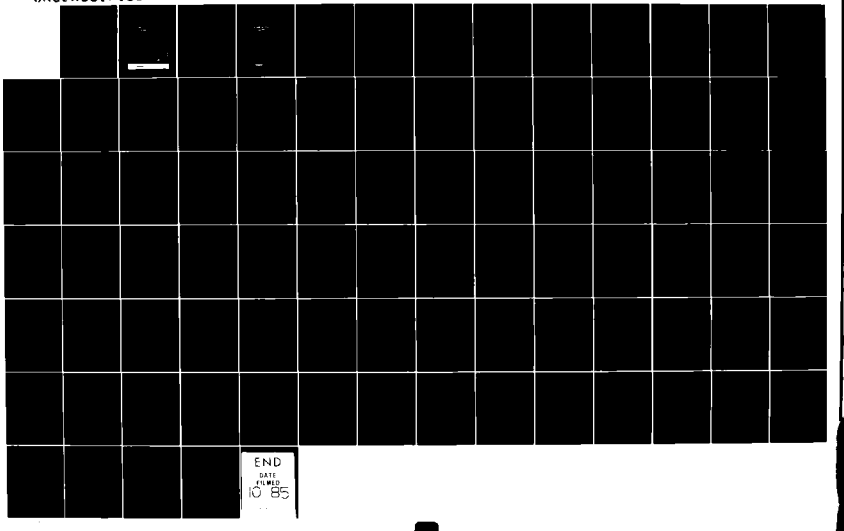

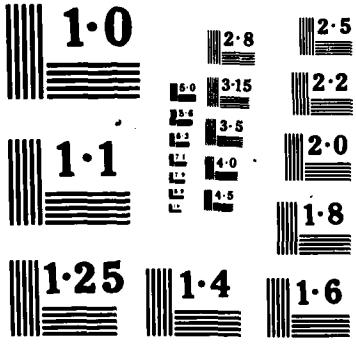
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Rand

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PREFACE

This research was undertaken by Rand's Defense Manpower Research Center for the Office of the Assistant Secretary of Defense for Manpower, Installations and Logistics, under Department of Defense Contract MDA903-85-C-0030. The research uses a specially created micro database to analyze the enlistment choices of young men. The present report focuses on the decision whether to enlist; further work on enlistment, now under way, considers the choice of service and the selection of military occupational area. Such detailed analysis at the individual level has not been possible with previously available data and methods.

SUMMARY

The youth population forming the recruiting market for the armed services consists of groups of individuals who make decisions regarding schooling, work, and military service. Because those decisions are made systematically, by choice, the groups should be viewed as selected, nonrandom, subpopulations. Moreover, their enlistment decisions can be expected to differ in predictable ways that define the groups as distinct *segments* of the recruiting market. Knowing how enlistment determinants differ by market segment should aid the efforts both of recruiters and enlistment policymakers.

Our analysis focuses on two major market segments, high school seniors and nonstudent high school graduates, or, in short, *seniors* and *graduates*. The graduate segment is largely composed of persons who, upon graduation from high school, chose neither to continue their formal education nor to enlist in the military at that time. From the senior and graduate segments come nearly all recruits who enter the active duty service with a high school education or more.

To analyze the enlistment determinants within these segments of the recruiting market, a database with a large number of enlistees is required. We thus created a choice-based sample of young male enlistees and nonenlistees, drawn in Spring 1979. We combined observations from the 1979 *DoD Survey of Personnel Entering Military Service* (AFEES) and from the 1979 wave of the *National Longitudinal Survey of Labor Force Behavior, Youth Survey* (NLS). The AFEES survey provided observations on male enlistees, the NLS on male nonenlistees. We employed statistical methods to correct for any bias associated with the sample having a far higher proportion of enlistees than does the population.

We base our empirical analysis on hypotheses derived from the theories of investment in human capital and career choice, and, on the demand side, on the theory of recruiter behavior. The results confirm many of the hypotheses, lending strong quantitative support to the theories as paradigms for understanding enlistment behavior. In addition, the results validate our choice-based sampling methodology as an effective means of analyzing events which occur with low frequency in a general population.

Overall, we find that seniors and graduates do differ substantially in the empirical determinants of their enlistment decisions. Graduates appear more sensitive to work-related variables such as employment status, wage rate, labor force experience, job tenure, and, if not

currently employed, duration of joblessness. Seniors, by contrast, appear more sensitive to education-related variables representing learning proficiency, ability to finance further education, and parental influence.

A key finding is the major role education expectations play in affecting enlistment behavior in both market segments. Overall, seniors who expect more education (63 percent) are less likely to enlist, whereas graduates who expect more education (40 percent) are more likely to enlist. More importantly, however, whether a young man expects to obtain more education in the future defines important market segments *within* the senior and graduate segments. The effects of three enlistment determinants depend greatly on an individual's education expectations: Armed Forces Qualification Test Score (AFQT), mother's education, and the individual's wage rate.

- **AFQT.** Among seniors as a whole, the propensity to enlist falls as AFQT score rises; however, this effect is driven by those who do *not* expect more education—AFQT has no significant effect on the enlistment probability of seniors who expect more education. Although among graduates as a whole, AFQT score has no effect on enlistment probability, its effect differs markedly by education expectations: enlistment probability *increases* with rising AFQT among graduates who expect more education but *decreases* among those who do not.
- **Mother's Education.** Mother's education, to some degree a measure of parental influence, has no effect on the enlistment probability of seniors or graduates who expect more education, but has a very significant *positive* effect on both seniors and graduates who do not expect further schooling. This effect suggests that when an individual does not plan to continue his schooling, his parents may influence him to obtain useful training or experience through military service rather than civilian employment.
- **Wage Rate.** For seniors and graduates, the decision to enlist is negatively related to the wage rate on the current or most recent job. Moreover, the negative effect is most pronounced among those who do not expect more education. Differential wage responsiveness by market segment, clearly apparent in our results, has gone undetected in numerous previous studies relying on aggregate data rather than individual data.

We estimated wage elasticities, which summarize the expected percentage decrease in the probability of enlistment due to a 1 percent

increase in the individual's wage rate. For comparison with aggregate data studies, which have concentrated on upper-AFQT enlistments, we took a weighted average of the wage elasticities of upper-AFQT seniors and graduates. Our estimate of −1.5 exceeds many, but not all, recent aggregate data estimates. Further, our wage elasticities *differ greatly* between the two segments: seniors have a much higher wage responsiveness than do graduates. Holding military pay constant, an overall increase in male youth wages would produce a larger percentage decline in senior enlistees than in graduate enlistees. Also, the change in an area's recruiting potential due to changes in civilian wages will depend on the senior/graduate mix—the higher the proportion of seniors, the greater the change in potential enlistments.

Another finding concerns the abundance of seniors and recent high school graduates in a local recruiting market. A graduate's enlistment probability is much less in areas with a fairly high proportion of seniors and recent graduates among the youth population, whereas a senior's enlistment probability is unaffected. In such areas, recruiters apparently rely more on senior enlistees to make their recruiting goals, presumably reflecting the relative ease of contacting potential recruits while in high school. This finding deserves further investigation, as it raises the possibility that the graduate segment is underworked in areas where seniors and recent graduates are more plentiful.

Finally, our database and enlistment regressions can aid recruiting efforts by providing information about different segments of the recruiting market and the enlistment likelihood of individuals with various characteristics. Our methodology and approach can be applied in other settings to enhance the research value of surveys pertaining to enlistment and reenlistment decisions of men and women in the active and reserve forces.

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I. INTRODUCTION

Each year about 300,000 young men enlist for active duty military service, supplying the vast portion of the new personnel needed to sustain the U.S. defense capability and, at the same time, establishing the armed forces as a major, if not *the* major, career portal. The importance of male enlistments to the military and to the national economy has stimulated numerous studies, which with few exceptions have been *aggregate* data analyses of actual enlistments or individual data analyses of enlistment *intentions*. The studies have proved fruitful in providing policy information for the allocation of recruiting resources, for forecasting trends, and for the design of enlistment advertising and incentives. However, aggregate and intentions studies both possess limitations that may affect the interpretation and applicability of their results. Our paper, utilizing *microdata* on *actual* enlistment behavior, offers a new, complementary perspective on the enlistment decision-making of young men. Moreover, our approach and results might effectively be applied to the design and analysis of enlistment incentive experiments, which so far have been conducted in the mold of aggregate data studies.

Aggregate studies analyze enlistment behavior in terms of variables describing recruiting and employment conditions locally or nationally. Typically, an aggregate study relates the number of "high quality" enlistments—high school graduates who score in the upper half of the Armed Forces Qualification Test (AFQT)—to variables quantifying the relative military/civilian wage, employment conditions, size of youth population, number of recruiters, and, occasionally, enlistment quotas and advertising.[1] The wage and employment variables are at best surrogates for the variables pertinent to any specific individual. Further, the models assume the same structure across recruiting areas, regardless of the values of additional variables which, our analysis indicates, also affect enlistment choice. Translated into aggregate terms, these variables include the percentages of the youth population who are high school seniors, interested in further education, live at home, come from low (or high) income families, and have relatively high AFQT scores. The results from our research imply that these variables could help in quantifying a market's recruiting potential and improving the

[1]For example, see Grissmer (1978), Fernandez (1979), De Vany and Saving (1982), Brown (1983), Ash et al. (1983), Dale and Gilroy (1984), Dertouzos (1985), and Cotterman (forthcoming).

time since last attended school. Race/ethnicity indicators are also available for blacks and Hispanics. The employment and earnings variables raise difficulties in specifying hypotheses because, rather than being pure measures of economic opportunity, they combine economic opportunity with aspects such as the individual's labor supply preferences and the quality of the job match.[1]

Among the variables, *wage rate* probably most clearly reflects economic opportunity, and we expect the enlistment propensity to decline as wage rates rise. This should hold for both seniors and graduates, with the effect possibly being stronger for graduates. This prediction does not derive from the theory of firm-specific human capital, but is an offshoot of job matching or job search theories, which recognize the existence of wage dispersion in the labor market. Given one's skill and experience, the wage will depend on the "draw" from the wage distribution. Since job search is costly, and since the gains from further search eventually diminish, market information will not be perfect and the wage dispersion will persist. Young workers, unsure of the best career track, may hold a variety of jobs, and the theory suggests that the higher the wage on any given job, the less the chance of bettering their situation through a job change.

Hours of work mixes the number of hours employers offer with the number of hours the individual chooses. For graduates, who earlier chose work over school or enlistment, longer hours of work presumably reflect a stronger preference for work; hence, enlistment propensity should decline with hours. Seniors who choose not to work, or work few hours, may have excellent employment opportunities but desire to devote more time to study, possibly in preparation for postsecondary school. If so, hours of work basically serve as a selection variable, whereby seniors working longer hours reveal that they are less likely to continue with school and more likely to work *or* enlist. Thus, the relationship between a senior's *hours of work* and enlistment propensity is ambiguous.

For similar reasons we have no firm hypothesis about a senior's employment status. For example, a senior who is not currently employed, but who worked in the past 12 months, may be under no duress; he may have worked the summer before his senior year and, in the spring of his senior year, spends time studying or in extracurricular activities. In contrast, graduates are "trying to make a living" and would be more likely to enlist the longer they are out of work. Thus, a

[15]Previous microdata studies of enlistment (both 1982 Kim studies, and Daula et al., 1982) did not include variables dealing specifically with the individual's current or past work experience. Each used only state unemployment rates to control for locational economic conditions, rather than the individual's own employment situation.

education of both parents.[11] We anticipate a lower enlistment propensity for seniors who expect more education because postsecondary institutions, not the military, are geared to provide higher education.[12] However, the role of the mother's education seems more difficult to interpret. Our view is that more educated parents may express more concern or influence regarding their son's education. If he expects to obtain further schooling, the reenforcement of that expectation will be stronger among more educated parents. But if he does not expect further schooling, the same parents will direct him toward careers which they believe provide opportunities for training and personal development.[13] Military service provides such opportunities, but so does the civilian economy. Hence, the effect of mother's education on enlistment propensity seems unclear.

The picture for graduates may be somewhat different. In our data, the vast majority of this group (85 percent) chose not to attend any postsecondary school in the years after graduation from high school. Still, 40 percent of the graduates expect more education. Indeed, Manski and Wise (1983) found that of those in the 1972 graduating class who did not immediately go on to postsecondary school, only a third eventually returned to school, generally completing only an additional year or two. This suggests that those expecting more education may be willing to substitute on-the-job training and experience for further formal education to fulfill their educational aspirations. Therefore, the military may provide an attractive substitute for those desirous of more education, but who have not yet obtained it through traditional educational channels or through the training and experience offered by their civilian jobs. We might then conjecture that a graduate's enlistment propensity will be *higher* if he expects more schooling.

With regard to mother's education, we expect the same ambiguity of effect for graduates as for seniors.

Employment Situation. AFEES-NLS variables on employment and earnings include *employment status*,[14] *hourly wage, weekly hours of work, job tenure, time since last job*, and, for graduates (i.e., nonstudents),

[11]In our data, the correlation between mother's and father's education was quite high (.63), which supports the notion that mother's education is a reasonable proxy for parental education level.

[12]Manski and Wise (1983) showed that 53 percent of the senior class of 1972 went on to postsecondary school the following year.

[13]This kind of parental concern has been formally described by Becker (1976) in "A Theory of Social Interactions," especially pages 264–273.

[14]Employment status is not the usual one of employed, unemployed, or out of the labor force but instead indicates currently employed, not currently employed but has worked in the past 12 months, or not currently employed and has not worked in the past 12 months.

measure of trainability (e.g., successful completion of advanced military training). For *age when a senior*, we expect slower students to require more time to complete high school. Also, older seniors may have been held back in elementary school, indicating lower ability. Indeed, we do find that older seniors have lower AFQT percentile scores. In our data, 17 year old seniors averaged the 58th percentile, 18 year olds averaged the 54th percentile, and, remarkably, 19 or older seniors averaged the 29th percentile.[8]

We expect learning proficiency to have less of a negative impact on enlistment propensity among graduates than seniors. Being nonstudents, graduates have previously revealed a low school propensity; because their school propensity changes little as proficiency rises, the effect on enlistment propensity would be less.

Ability to Finance Schooling. We expect the ability to finance schooling to rise with *family income* and, holding income constant, fall with *number of siblings*. Enlistment propensity, then, should decline with family income but rise with the number of brothers and sisters. Ability to finance should also be higher for persons who *live at home*, that is, with their parents or guardians. Those living at home probably pay little for room and board and can more rapidly accumulate savings for further education.[9] As with the other hypotheses, this is a *ceteris paribus* statement; in particular, employment status, wage rate, and hours of work are held constant (as they are in the empirical analysis). These additional variables help control for the possibility that some young men live at home because they "can't afford" to move out. Also, the effect of these variables may be weaker for graduates than seniors, again because graduates have revealed a low propensity for further school. Of course, some graduates may expect further schooling, and the *learning proficiency* and *ability to finance* variables may affect their enlistment behavior differently from that of graduates who do not expect further schooling.

Education Expectations. We employ two variables to proxy some of the social and cultural influences on an individual's education expectations. One variable indicates whether he *expects more education*,[10] and the other variable is the *mother's education*, which reflects the

[8]These figures are based on weighted NLS data which *exclude* seniors in percentiles 1-10. We omit from our analysis persons with scores in that range because they are categorically ineligible to enlist.

[9]In the AFEES-NLS, the family income variable is available only for persons living with their parents or guardian. Ninety-five percent of the seniors live at home, as do 71 percent of the graduates.

[10]An alternate choice would be *desires more education*, but preliminary analysis showed this to work the same way as *expects more education*.

the firm and the worker will have a stronger incentive to invest in firm-specific human capital, the firm realizing that the worker will be productive, and the worker realizing that he will be suitably treated and compensated by the firm for agreeing to specialize in the development of his skills. The theories seem especially relevant for graduates. We expect graduates who have more months of labor force experience to be better able to judge the quality of a prospective job match, and graduates who have been with an employer longer to be more likely to have invested in firm-specific human capital, and so be less likely to separate.

On net, we expect the school propensity to rise with learning proficiency, ability to finance, social and cultural factors favoring further schooling, and to decline with current employment opportunities. The work and enlistment propensities follow the reverse pattern, except that the better the current employment opportunities, the greater the propensity to work rather than enlist. *Hence, the enlistment propensity should be negatively related to one's learning proficiency, ability to finance further schooling, social or cultural factors promoting further schooling, and current employment opportunities.* These relationships apply to both seniors and graduates, but because of the selectivity of the graduate population, their behavioral relationships may be weaker or stronger relative to the seniors'. The graduates, consisting of relatively fewer college-bound youths,[7] should be less sensitive to education-related variables and more sensitive to work-related variables.

Specific Hypotheses

The discussion of hypotheses focuses on the effect of the explanatory variables on the enlistment probability, holding other variables constant. The hypotheses are tested in a multivariate model that statistically controls for the other variables, and the estimated direction and size of the relationships will not necessarily be similar to what one might infer by comparing the means of the explanatory variables for enlistees and nonenlistees.

Learning Proficiency. We measure learning proficiency through both *age when a senior* and *AFQT score*, presuming that younger seniors and those with higher AFQT scores have a higher learning proficiency and lower enlistment propensity. The use of AFQT as a measure of learning proficiency seems consistent with the services' use of it as a

[7]Only 15 percent of our graduate population received any postsecondary schooling; thus, the vast majority have continually elected to remain in the civilian labor market for whatever reason after their senior year.

Theoretically, one chooses the career anticipated to provide the most satisfaction, depending on one's valuation of the kind of work, work conditions, opportunities for training and personal development, employment security, location, fringe benefits, wage or salary, and hours. For instance, military career features include basic training, advanced training, a multiyear commitment, regimentation, the command structure, the promotion system, and the compensation structure.[6] Our data on civilian careers are limited to information on current employment and earnings, and here theory suggests that the better one's current employment opportunities, the higher the propensity to choose work over enlistment or school. Still, important employment distinctions between seniors and graduates may exist: graduates selected not to enlist when they were seniors and presumably hold more "permanent" jobs, whereas seniors' jobs may be more casual or short term. The impact of current employment opportunities, then, may differ between seniors and graduates.

As Buddin (1984) mentions, for many persons the enlistment decision involves a separation from one's current job, and the theories of firm-specific human capital and job matching are relevant. The theory of firm-specific human capital (Becker, 1964) holds that as a worker acquires skills useful only at a particular firm, the firm will raise his wage to prevent the loss of those skills through a quit. Analogously, the firm has less incentive to fire or lay off a worker with high firm-specific human capital, so he is less likely to be unemployed during a downturn at the firm. Job matching theory (Mincer and Jovanovic, 1982; Jovanovic, 1979a, 1979b) suggests that, even though the firm and the worker may be well informed about each other's readily observable characteristics, the full gains of a job match may only be perceived after experience on the job. If the experience falls short of expectations, termination of the match may be mutually beneficial. If expectations fall short for the worker, the firm may try to right the situation by increasing the worker's compensation or improving the work conditions; if expectations fall short for the firm, the worker may try to improve his work habits or be willing to accept lower pay or poorer working conditions. But there are limits to the extent each side will adjust, limits which are essentially dictated by whether, given the experience on the job, their joint wealth would be greater if they separated than if they remained together. These two theories complement one another: the quality of the job match can largely be assessed during the first few months of employment, and if the match is good,

[6]These features were essentially the same for everyone considering enlistment in Spring 1979, so we cannot estimate their effect on the enlistment probability with our data.

SUPPLY HYPOTHESES

Theory

Becker (1964), Mincer (1974), Ben-Porath (1967), Rosen (1976), and Heckman (1976) have shown that the theory of investment in human capital can describe the quantity of education an individual would choose. The choice depends on his education demand and supply curves, which together capture factors underlying the choice. The demand and supply curves, respectively, show how the perceived value and cost of additional education changes as the amount of education increases. The demand curve depends on increments to future income (monetary returns) as well as the value one attaches to greater understanding or appreciation of the world (psychic returns). The monetary increment will tend to be lower for persons with a high wage. The incremental monetary and psychic returns eventually diminish as the level of education increases, producing a downward sloping demand curve. Because tastes differ, the value placed on incremental returns to education can differ across individuals. The supply curve, which also may differ over individuals, depends on direct expenses and one's learning proficiency. Direct expenses include tuition, fees, incremental expenses for travel, lodging, clothing, and the cost of funds needed to finance the education. The latter may be especially high for those who cannot self-finance education because it is difficult to borrow on expected future earnings. Persons who are more proficient learners can produce more education per semester, thus their marginal cost would be lower. Other things equal, persons with higher demand curves or with lower supply curves choose a higher level of education.

Human capital theory suggests that an individual's willingness to obtain further education varies positively with learning proficiency,[4] with ability to self-finance, and with sociocultural factors favoring further education, and negatively with current employment opportunity. Conversely, these factors should have an opposite relation to both the propensities to enlist and to work.[5] We now consider factors that help distinguish between these alternatives.

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[4]Venti and Wise (1982) show that the probability of application to a four-year college rises with the individual's Scholastic Aptitude Test (SAT) score. The SAT is used by colleges as a screening device to evaluate the ability of an individual to perform at a suitable academic level.

[5]We refer to the supply side as the individual's *propensity to enlist* and reserve *probability of enlistment* for the probability that the final outcome is enlistment, which can be affected by both supply and demand behavior. Both the propensity to enlist and the probability of enlistment are latent (unobserved) variables. In our empirical analysis, we use maximum likelihood methods to identify the determinants of the probability of enlistment, given observations on individuals who have chosen, or chosen not, to enlist.

The AFEES-NLS database can be used to study the enlistment choice in Spring 1979. Although both the AFEES and the NLS are longitudinal, the AFEES-NLS is cross-sectional. Hence, analysis of AFEES-NLS can quantify the determinants of enlistment at a point in time but cannot address longitudinal aspects such as the likelihood of a person's enlisting over the present year. Similarly, although our discussion has concerned school, work, and enlistment choices, the AFEES-NLS data apply only to the enlist/not enlist choice, the latter combining work and school. For instance, among seniors we cannot analyze the determinants of school versus work, because the seniors' choices are not yet revealed (and may not be revealed until after graduation). In contrast, many seniors choose to enlist and, as our earlier data indicate, sign enlistment contracts during their senior year. Thus, their enlistment choice is revealed. Of course, not all seniors who will ever enlist, do so in their senior year, and our analysis of nonstudent, high school graduates explores the behavior of most seniors who enlist later. (The enlistment rate among seniors later attending postsecondary institutions is quite low.)

In performing our analyses, we assume that the enlistment behavior of respondents in the AFEES-NLS (Spring 1979) is similar to the behavior of seniors and graduates at other times of the year, apart from seasonal effects that would be reflected in changes in the intercept terms of our regressions. Under this assumption, we have chosen weights for the seniors and graduates that correspond to their 1979 annual enlistment rate, in effect calibrating the regressions to predict the number of seniors and graduates who would enlist in the year rather than in a given month or season (e.g., Spring). The weights accommodate the fact that seniors are seniors during the academic year (approximately 10 months), hence 1979 senior enlistments represent the enlistment of seniors during the academic portion of fiscal year 1979. We recognize that our assumption is an approximation, chosen in part for convenience in making annual-level predictions and for clearly displaying our results to the reader, and that further analysis (and additional data) would be required to test the assumption. The same kind of assumption is widely embodied in aggregate models of high quality enlistments, for these models do not permit the entire regression structure to change monthly or seasonally, but instead confine the latter effects to be shifts in the regression's intercept, much as we have assumed.

III. DATA, THEORY, AND HYPOTHESES

THE AFEES-NLS DATABASE

The AFEES-NLS database, described in Hosek and Peterson (1983), is a choice-based sample combining observations from the *1979 DoD Survey of Personnel Entering Military Service* (AFEES) and the 1979 wave of the *National Longitudinal Survey of Labor Force Behavior, Youth Survey* (NLS). The AFEES supplies observations on enlistees, the NLS on nonenlistees.[1] The surveys, both conducted in Spring 1979 and having similar instruments, permit the construction of a common set of equivalently defined variables. Moreover, location identifiers on each record enable us to enrich the file by adding variables such as the number of recruiters or the size of the local youth population. Appendix A contains a glossary of variables used in this analysis, and Appendix B provides the means of the variables.

The AFEES-NLS provides far more observations on male enlistees (over 5,000 in all) than could have been expected from the NLS alone, with its total of 4,300 male respondents aged 17 and up, or indeed from a point-in-time random sample of 1,000,000 observations.[2] The large number of enlistments in the AFEES-NLS permits multivariate analyses of enlistment decisionmaking with many explanatory variables and within separate segments of the recruiting market.[3]

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[1]The working file of nonenlistees excludes the few NLS respondents who had enlisted, as well as respondents who would be ineligible for military service because of an AFQT score in the lowest percentiles (1–9), or who had a health condition limiting the kinds or amounts of work they could do.

[2]Suppose the active duty forces enlist about 300,000 nonprior service males each year, and further suppose they all come from the 17 to 22 age range (although in fact some would be older). That age range contained over 9,000,000 young men in 1985. A random survey seeking information on the determinants of current enlistment decisions might ask survey respondents, "Did you enlist for active duty service in the past month?" Perhaps 30,000 young men in the population would answer yes to this question, or roughly one in every 300. Thus, a total 1,500,000 respondents would be required to obtain 5,000 respondents who had enlisted in the previous month.

[3]Because the AFEES-NLS is a choice-based sample composed of two stratified random samples, we use the weighted, exogenous sampling maximum likelihood (WESML) method suggested by Manski and Lerman (1977). This technique yields consistent parameter estimates and consistent, asymptotically efficient standard errors of the estimates. The likelihood of each obeservation is weighted by the product of its own normalized sampling weight and the choice-based sampling weight, which is the ratio of the population enlistment rate to the sample enlistment rate. See Appendix C for further details.

include nonstudents with 12 or more years of schooling completed.[5] But how does the enlistment performance of these markets compare?

Table 2 displays the size, number of enlistments, and enlistment rate of the senior and graduate market segments during 1979. The upper-AFQT markets are represented as well, revealing that 52 percent of the graduates score in the upper half of the AFQT, virtually the same percentage as for the seniors. Overall, the rates are 3.9 percent for the seniors and 5.3 percent for the graduates. As one might anticipate, the rates for the high quality portions of these markets are lower: 3.3 percent for seniors and 5.1 percent for graduates.

Given that the overall enlistment rates between the two segments differ, does individual enlistment behavior also differ, and if so, in what ways? To examine this, we next discuss the supply and demand factors affecting the enlistment probabilities of seniors and graduates.

Table 2

1979 ENLISTMENT PERFORMANCE OF THE SENIOR AND GRADUATE MARKETS

Market	Size	FY1979 Enlistments	Enlistment Rate
Overall			
Seniors	1,551,000	61,000	3.9
Graduates	2,997,000	159,000	5.3
Upper-AFQT			
Seniors	823,000	27,000	3.3
Graduates	1,550,000	79,000	5.1

[5]The segments with fewer than 12 years of schooling are not as interesting because enlistment supply has never been a problem for this group, and because enlistment demand for them is low, partly as a result of their greater probability of leaving military service before completing the first term. The remaining segment, postsecondary students, have historically had a very low rate of enlistment, and we have few observations on them in the AFEES-NLS. The low enlistment rate is not surprising in light of the sequential decisionmaking model, which implies that postsecondary students have already chosen, when seniors, not to enlist. Special recruiting efforts and enlistment incentives may be able to increase their enlistment rate, however. See Shavelson et al. (1983) for a discussion of the recruiting potential of the community college market.

Table 1

SIZE AND QUALITY OF RECRUITING MARKET SEGMENTS, THOUSANDS OF MALES AGE 17-22, SPRING 1979

	Years of School			
Student Status	<12	12	>12	All
Overall Market				
Student	1,099	1,551	2,360	5,010
Nonstudent	1,566	2,574	423	4,563
Total	2,665	4,125	2,783	9,573
Upper-AFQT				
Student	372	823	1,967	3,162
Nonstudent	234	1,265	285	1,784
Total	606	2,088	2,252	4,946
Percent Upper-AFQT				
Student	34	53	83	63
Nonstudent	15	49	67	39
Total	23	51	81	52

SOURCE: 1979 National Longitudinal Survey of Youth.

cells reveal a high degree of selectivity. We exploit this selectivity to structure the empirical analysis and interpret the results.[3]

Our analysis focuses on the segments of the market that supply the bulk of the enlistments who are high school graduates or high scorers on the AFQT.[4] These segments are the high school seniors and the nonstudent, high school graduates, or *seniors* and *graduates*. The latter

[3]Some readers may also notice that only 34 percent (372/1,099) of the presenior students are high scorers on the AFQT. This results from the fact that we restricted our sample to ages 17-22, which is rather old for sophomores and for most juniors. The low percentage occurs because the older students in a grade tend to be the intellectually slower students. The 17-22 age restriction is unlikely to have much effect on the representativeness of our sample at higher schooling levels (grades 12 and above), although some of the brightest seniors (the 16 year olds) are excluded.

[4]The graduates also contain a fairly small number of people (4 percent of the nonenlistees, 8 percent of the enlistees) who did not graduate from high school but instead obtained a Certificate of General Educational Development (GED). In the empirical work, we employ a separate indicator variable to control for the GEDs.

work or enlist.[1] For those finishing high school, the second decision is whether to seek postsecondary education, work, or enlist. Finally, among those in a postsecondary institution, the decision is to continue their education, work, or enlist. As the figure also shows, those having left school to work can either return to school or enlist. (We recognize but do not depict the subsequent decisions of those who enlist.)

The notion of sequential decisionmaking implies that the distribution of youth by level of education and status (school, work, or service) results systematically from choice. Therefore, the various segments are *selected subpopulations* which presumably differ in terms of aspirations, opportunities, and abilities. For evidence of this point, consider the population of male youth, ages 17–22, who represent the primary male pool for military recruiting.

Table 1 shows the size of this population in Spring 1979, the time of our data, grouped by level of schooling and student status. The upper panel shows the overall population, the middle panel restricts the counts to young men scoring in the upper half of the Armed Forces Qualification Test, and the lower panel reports those counts as percentages of the total counts.[2] "Years of school" indicates the grade currently being attended for students, and the highest grade completed for nonstudents. Since the data come from late in the academic year, practically all students will complete the grade. The table shows, for example, 1,551,000 students in the twelfth year—high school seniors—and 2,574,000 nonstudents with a high school education only. As expected, the table indicates a substantial variation in the proportion of high scorers (AFQT of 50 or more) across the cells. Only 15 percent (234/1,566) of the high school dropouts are high scorers, versus 53 percent of the seniors and 83 percent of the postsecondary students. In other words, the different market segments represented by the table's

[1]By "work" we mean the residual of not continuing schooling and not enlisting. Persons in school can hold jobs, but in our categorization the jobs are considered secondary to the schooling. Note that "work" includes persons who are employed, looking for work, or out of the labor force. Movements in and out of the labor force occur frequently among youth, and nearly all nonstudent, nonenlisted male youth become year-around labor force participants by their early twenties. Given this strong orientation toward civilian employment, our use of the term "work" seems apt.

[2]The AFQT score derives from a composite of aptitude scores from the Armed Services Vocational Aptitude Battery (ASVAB), which was administered to the NLS population in 1980; see *Profile of American Youth* (1982). As *Profile* notes (p. iii), this marked "the first time that a vocational aptitude battery has been given to a nationally representative sample." The ASVAB consists of 10 subtests: arithmetic reasoning, numerical operations, paragraph comprehension, word knowledge, coding speed, general science, mathematics knowledge, electronics information, mechanical comprehension, and automotive-shop information. The AFQT score is a combination of the word knowledge, paragraph comprehension, arithmetic reasoning, and numerical operations scores.

II. MARKET SEGMENTATION

Segmentation means different things in different contexts. For instance, aggregate data analyses of enlistment segment the market by confining investigation to "high quality" males. Advertising campaigns draw upon attitudinal and intention research that identifies motives to enlist, such as opportunities for personal development, training, patriotism, and adventure. Because the motives differ across groups, the motives implicitly define different market segments. Similarly, recruiters develop a working knowledge of enlistment motives, and further, they operate in segments that are physically distinct. The most prominent segments include the recruiting station and the high school, but also encompass postsecondary schools, career fairs, civic functions, and other locations. Characteristics of the typical recruiting contact will of course vary across these segments.

Our approach to segmentation derives from the concept of sequential decisionmaking. This concept provides a viewpoint well suited to describe the process young people follow in choosing among further schooling, work, and enlistment. Moreover, the concept is compatible with the diverse approaches to segmentation mentioned above. It can be applied to the analysis of "high quality" youth, to youth grouped by motivation, and to youth in physically distinct areas.

Figure 1 depicts the way we envision the main sequence of decisions. The first decision is whether to finish high school or to leave, either to

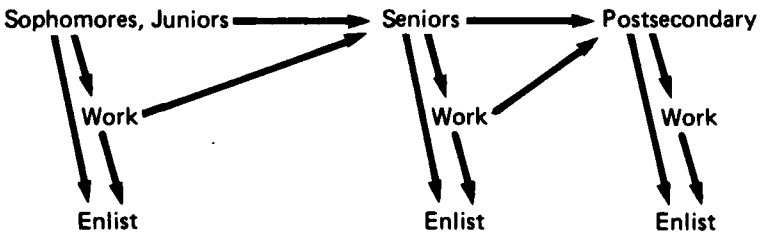

Fig. 1—Sequence of school, work, enlist decisions

in or not in the military in 1979, which depends on both enlistment and attrition behavior.

Our analysis focuses on the actual enlistment behavior of young men in Spring 1979 and addresses the following questions:

- Is the recruiting market homogeneous, as implicitly assumed by aggregate data studies, or should it be viewed as segmented?
- What are the determinants of the individual's enlistment choice, and do they vary between major market segments?
- Within a segment, how do the determinants vary by "quality" or by educational expectations?
- How effectively will a model of individual enlistment choice discriminate among possible enlistees? Will some individuals be predicted to have much higher enlistment propensities than others?

reliability of parameter estimates of the traditionally included variables. Data on some of the suggested variables could be obtained from the decennial census and from Current Population Surveys, while data on others could come from appropriate modifications to periodic surveys of youth attitudes which underlie the enlistment intentions studies.

In their own right, surveys of enlistment attitudes and intentions have helped clarify the monetary and nonmonetary sources of appeal of military service. Moreover, related research has shown that enlistment intentions are a statistically significant predictor of one's subsequent propensity to enlist (Orvis, 1982). Still, the structure explaining enlistment intentions may not be the same as the structure explaining enlistment itself, and although intentions may be intrinsically interesting to investigate, the answer to many questions involving the allocation of recruiting resources and the effects of enlistment incentives turns on actual enlistment behavior. The linking of survey data on intentions to data on subsequent enlistment choice mollifies the situation, but because enlistment may have occurred months or years after the intentions data were collected, explanatory variables from the intentions survey may no longer be timely. In contrast, our database, a choice-based sample called the AFEES-NLS,[2] permits analysis of actual enlistment behavior in terms of contemporary and presumably more relevant variables.

Although this study is not the first to use microdata to study enlistment decisions, it is the first to have a large population of new enlistees with which to perform detailed analyses. Kim (May 1982, July 1982) used the 1979 and 1980 *National Longitudinal Survey of Labor Force Behavior, Youth Survey* (NLS Youth Survey) to study enlistments among 1978 male high school graduates and among 1979 noncollege educated males aged 17–22 in 1980. The number of new enlistees in each study was quite small (58 among 1978 high school graduates and 103 among 1979 noncollege males). Such small numbers do not allow for stratification of the data to examine whether enlistment behavior differs among subpopulations of youths. Daula et al. (1982) used the 1979 NLS Youth Survey to analyze male high school graduates in the military in 1979 versus those in the civilian sector. Their data include the military supplement to the NLS, giving them over 700 enlisted personnel. However, they could not analyze *current* enlistment behavior in 1979 because 70 percent of their enlisted sample entered active duty before 1978. Instead, their study concerns who is

[2]Details on the creation of the AFEES-NLS database appear in Hosek and Peterson (1983).

graduate's enlistment propensity should be positively related to *time since last job* and to the employment status indicator for those not having worked in the past 12 months.

We expect a senior's *job tenure* to be negatively related to enlistment propensity because we take longer tenure to mean that the senior and his employer find the work relationship mutually satisfactory. The negative effect should be even stronger for graduates, who, as opposed to seniors, are less likely to have selected short-term or casual jobs. In the same vein, graduates who have been out of school longer—i.e., for whom *time since last attended school* is greater—should have lower enlistment propensities. Those with the higher propensities will have already enlisted, while those remaining in the "work" alternative will increasingly be persons relatively satisfied with their success in the labor market.

Finally, compared with white non-Hispanics, blacks and Hispanics may be more likely to enlist if their military opportunities are better than their civilian opportunities. This would be the case, for example, if military opportunities were the same for all race/ethnic groups, but civilian opportunities were fewer for blacks and Hispanics. Lower quality education, language difficulties, and discrimination contribute to unequal opportunities in general, but the existence and extent of inequalities in the military versus the civilian sector are not well known.

Table 3 summarizes our supply hypotheses. The entries in the table show the anticipated effect of an increase in the level of the explanatory variable on an individual's propensity to enlist. The "weaker" effects denoted for graduates in the table may manifest themselves as smaller coefficients (less magnitude) or as lower levels of significance (smaller t-statistics with respect to the null hypothesis of no effect). It is possible that selection effects could result in changes of sign for graduates relative to seniors. The "stronger" effects signal potentially larger coefficients and/or higher significance levels.

DEMAND HYPOTHESES

Theory

Our comments on demand theory relate to recruiter behavior, but we mention at the outset that the demand side includes other important factors which we cannot study with our data. These factors include national advertising, local advertising, enlistment bonuses, educational benefits, length of enlistment term, availability of openings in military

Table 3

SUPPLY HYPOTHESES

Explanatory Variable	Expected Effect on Propensity to Enlist	
	Seniors	Graduates
Learning proficiency		
Age when senior	+	+ (Weaker)
AFQT	-	- (Weaker)
Ability to finance school		
Live at home	-	- (Weaker)
Family income	-	- (Weaker)
Number of siblings	+	+ (Weaker)
Education expectations		
Expects more education	-	+
Mother's education	?	?
Employment situation		
Hourly wage	-	- (Stronger)
Weekly hours	?	-
Months since school	n.a.	-
Months on current job	-	- (Stronger)
Months not employed	?	+
Race/ethnicity		
Black	+	+
Hispanic	+	+

occupational specialties, Delayed Entry Program[16] policy, and recruiter management. We must take them as given, as they were in the Spring of 1979, even though significant changes in many of the factors have occurred since then. In Spring 1979, these factors were essentially the same throughout the nation; without variation across individuals the separate effects of the factors cannot be estimated, and their net effect becomes embedded in the constant term of our enlistment regression equations. We can, however, try to make some progress in controlling for demand side effects with three variables which are available in our data: *recruiter density*, that is, the number of production recruiters relative to the male youth population in an area, *market share of*

[16]The Delayed Entry Program allows enlistees to defer their date of entry to the future, within limits set by the services.

seniors and recent graduates, which gives the proportion of current high school seniors and those who were seniors the previous June in an area's male youth population,[17] and *AFQT category IV*, which indicates whether the individual has an AFQT percentile score between 10 and 30.

Dertouzos (1985) recognized that recruiters can allocate their time to different segments of the market, and that the allocation decision depends on the relative marginal costs and benefits of alternative allocations. His analysis focused on high-quality and nonhigh-quality males. We have taken a different approach, concentrating on seniors versus graduates, but many of his ideas remain applicable. Our approach is consistent with the notion that recruiters do not know ahead of time who is high quality and who is not, and further, that high schools are a natural physical segment of the recruiting market.

From the recruiter's perspective, the marginal benefit derived from obtaining another recruit of a given type depends on the recruiter's incentives for doing so. Consistently high performance in recruiting may earn the recruiter recognition, awards, and more rapid promotion. Low performance may bring reprimands, reassignment, and slowed promotion. Further, performance is assessed relative to goals for the various kinds of recruits. The Army's goal system, introduced in 1980, differentiates among high school seniors, graduates, nongraduates, sex, nonprior service, and AFQT category in defining goals for recruiting active duty enlisted personnel. In 1979, the Army's system was far simpler, goals being defined simply for nonprior service men, for prior service men, and for women. The Air Force and Marine Corps systems were similar to that of the Army, and the Navy employed a point system providing incentives to recruit personnel anticipated to be more likely to pass training and remain throughout their term of service. Probably the overriding objective in 1979, and today, was to meet the total goal, because this ensured that the flow of new personnel into the military would satisfy estimated manning requirements.

Dertouzos' work suggests that the recruiter's marginal benefit from another recruit rises as the recruiter approaches his total goal. Beyond that goal, however, the marginal benefit may drop substantially. Several reasons could account for the drop. First, the literal incentives (points) may not be higher above the total goal than just below it. Second, the recruit supervisor would typically be interested in meeting the goal and less so in exceeding it. Thus, the recruiter would prefer to make the goal, say, two months in a row, rather than exceed it in one

[17]The previous year's seniors are included because they would still be subject to recruiter contacts made while they were in school.

and fall short in the next. Third, exceeding the goal may suggest to the recruiting command that the goal has been set too low and should be revised upward next period; thus, a recruiter's success may pave the way for his possible failure in future months.

In 1979, the service recruiting goals did not differentiate between seniors and graduates. Thus, an eligible senior would count for the same as an eligible graduate with similar characteristics, and the recruiter would be indifferent between the two. This indifference, however, does not imply that the recruiter would divide his time equally between the segments, for the allocation of the recruiter's effort also depends on the marginal cost of obtaining a senior or a graduate.

Dertouzos modeled marginal costs with a joint production function for high- and nonhigh-quality males that implies a production possibility curve for these two groups. Our approach assumes separate production functions for seniors and for graduates. For a given amount of the recruiter's time each period, he could devote it all to one segment or the other, or allocate it between the segments. The number of seniors and graduates he would expect from each possible allocation of time between the two segments defines a production possibility curve. Moreover, by increasing the total amount of time spent in recruiting from these segments, the recruiter can shift the curve outward. Indeed, the amount of time the recruiter spends actively recruiting would, according to theory, depend on the satisfaction from making the goal relative to the satisfaction from competing uses of his time (including nonrecruiting activities).

We draw attention to a fundamental difference between the senior and graduate segments, namely, that the senior segment is centralized whereas the graduate segment is atomistic. Local recruiters can periodically visit the high schools in their area, where they may address student assemblies and converse with students. In contrast, employers do not encourage visits by recruiters, so recruiting from the graduate segment often entails either pursuing contacts made earlier at high school or processing walk-ins. Therefore, the effort required to make additional *contacts* may be considerably lower in the senior segment than in the graduate segment. However, contacts are not the same as enlistments, and at the margin the additional contacts in high school may disproportionately consist of persons with low enlistment propensities, relative to additional contacts in the graduate segment. Therefore, while additional senior contacts may have a lower marginal cost, the marginal benefit may be minor.

The production function, then, summarizes the expected number of recruits the recruiter would obtain as he varied his time. This relationship also depends on factors the recruiter himself might not control,

such as bonuses, benefits, advertising, availability of training seats in certain military occupations, local employment and earnings conditions, size of youth population, and the socioeconomic composition of that population. The latter can be expected to differ by market segment, not only because gross observable characteristics vary (e.g., family income, percent nonwhite), but because, as we have argued, each segment is a selected subpopulation. As the recruiter gains experience in recruiting from his area, he develops insight into the kind of individual he is likely to contact in each segment, the individual's enlistment propensity, and the chance of converting that propensity into an enlistment.

Enlistment standards also affect an individual's enlistment choice. An individual may have a high propensity to enlist, but he may not meet specific qualifications for the service and/or occupational specialty he wishes to enter. Among other criteria, an individual's AFQT score is used to evaluate his qualification for a desired service or occupation. The services try to limit the number of enlistees with low AFQT percentiles, particularly those in category IV (AFQT of 10–30). Such individuals may be discouraged from enlisting by recruiters, or if not, they may choose not to enlist because they cannot sign up for the occupations they desire. Thus, we expect the net effect of AFQT in the category IV range to reflect both supply and demand effects. Above the category IV range, the demand side (ineligibility) effect diminishes.

Hypotheses

Recruiter Density. Enlistment should rise with recruiter density. As the number of recruiters relative to youth population increases, the recruiters should be able to contact, inform, and persuade more persons to enlist. The probability that any given individual enlists should therefore increase also. This holds for both the senior and graduate segments.

Market Share of Seniors and Recent Graduates. We assume that recruiters throughout the country will use basically the same techniques in recruiting from the senior segment. All high schools will be visited, so the probability of recruiter contact should be about the same everywhere for seniors, regardless of whether the local area contains relatively many or few seniors. Further, given that contact with a recruiting prospect has been made, we expect the extent of follow-up by the recruiter to be invariant with respect to the market share of seniors and recent graduates. Rather, the recruiter will pursue the follow-up to the point where the (recruiter's perception of) marginal

returns to further recruiting efforts equals the opportunity cost of the recruiter's time in trying to generate other contacts or in following up those contacts. Therefore, we hypothesize that *an individual senior's* enlistment probability should not be empirically related to the density of seniors and recent graduates in the area.

However, because more seniors would be reached in areas with larger senior populations, the number of senior recruits should be higher in those areas. Given the importance of the total recruiting goal and the apparently limited incentives for exceeding it, a higher number of seniors would reduce the need for recruiting from the graduate market. Fewer graduates would be contacted, and fewer graduate contacts would be pursued; thus we hypothesize that *a graduate's* enlistment probability would be negatively related to the density of seniors and recent graduates in the area.

AFQT Category IV. Individuals with AFQT scores in category IV—the 10th through 30th percentiles—are more likely to be below enlistment standards for many military occupations and more likely to have their numbers constrained by service policy. Therefore, we expect their enlistment probability to be lower for both seniors and graduates. Table 4 summarizes the demand hypotheses.

Table 4

DEMAND HYPOTHESES

Explanatory Variable	Expected Effect on Enlistment Probability	
	Seniors	Graduates
Recruiter density	+	+
Market share of seniors and recent graduates	0	-
AFQT category IV	-	-

IV. EMPIRICAL DETERMINANTS OF ENLISTMENT DECISIONS

INTRODUCTION

We estimate dichotomous logit models of the enlistment probability for seniors and for graduates utilizing the weighted, exogenous maximum likelihood (WESML) method presented in Manski and Lerman (1977). Sample sizes for our segments are 1,784 seniors (1,336 enlistees, 448 nonenlistees) and 2,187 graduates (1,419 enlistees, 768 nonenlistees). Overall, these results indicate different behavioral relationships for seniors and graduates. Such differences support the hypothesis that they should be viewed as different market segments. Education-related variables appear to be more important for seniors than for graduates, whereas work-related variables appear more important for graduates.

We also estimate two variants of the model that allow us to explore whether there were *within-segment* differences in behavior. The first variant stratifies observations by education expectations (expect more education, do not expect more education), and the second by AFQT group (upper, lower).[1] The education expectations stratification presumes that such expectations have been formed by the senior year. The results of this variant may be especially interesting to recruiters, who can obtain information about education expectations simply by asking their recruiting prospects. The utility of such information depends, of course, on whether individual enlistment propensity varies between those who do and do not expect further education. Based on weighted counts of our NLS data, 63 percent of the seniors and 40 percent of the graduates expect more education. The latter percentage, which may strike some as surprisingly high, is likely a consequence of the fact that not all seniors who wish to obtain more education can do so immediately upon completing high school. Uncertainty about career preferences, inability to finance schooling, family reasons, and a desire to work for a while all help explain why a senior may defer enrollment in a postsecondary institution. In addition, some high school graduates

[1]The upper-AFQT group consists of individuals with AFQT scores in the 50th or higher percentile; lower-AFQT signifies those in the 10th to 49th percentiles.

who did not expect more education when they were seniors may have changed their minds.

If one rejects the maintained hypothesis that education expectations have been formed by the senior year, the AFQT stratification offers a reasonable alternative because the AFQT score, unlike education expectations, does not represent a decision that may be jointly determined with the other choices we are considering. As Table 5 implies, positive education expectations are more frequent among upper- than lower-AFQT seniors; hence, among seniors the AFQT stratification conveys information similar (although not identical) to that conveyed by education expectations. The distinction appears less evident for graduates; positive education expectations are only slightly higher for upper-AFQT graduates than lower. Additionally, because aggregate data studies focus on high school graduates (including seniors who have graduated by the time they enter service) in the upper-AFQT range, our results for the upper-AFQT seniors and graduates should be most comparable to those studies.

Table 5

PERCENTAGE OF SENIORS AND GRADUATES EXPECTING MORE EDUCATION

Segment	Expect More Education
Seniors	
Upper AFQT	74
Lower AFQT	44
All	63
Graduates	
Upper AFQT	44
Lower AFQT	38
All	40

SOURCE: Weighted data from the 1979 NLS.
NOTE: Upper AFQT = 50-100
Lower AFQT = 10-49
AFQT 0-9 excluded

INTERPRETING THE RESULTS

The dichotomous logit model relates the logit, or log of the odds ratio, to a linear function of the explanatory variables. In our case, the latter consist of supply and demand variables, and we assume these variables have an additive effect on the logit. Additivity implies that for any given level of an individual's supply variables (i.e., his propensity to enlist), the probability of enlistment depends on the level of the demand variables. Similarly, for any given level of the demand variables, the probability of enlistment depends on the level of the supply variables—hence, the higher the propensity to enlist, the higher the probability of enlistment.

Although we believe this additive form suits our 1979 data, we also considered a more complex, interactive form in which the *effect* of the supply variables depends on the level of the demand variables associated with recruiting activity. The rationale for the interactive form comes from Dertouzos' suggestion that recruiter effort may decline once the recruiter has achieved his recruiting goal(s). If so, the diminished recruiting effort might repress the structure of the enlistment propensity relationship, and even those with the highest enlistment propensity might not be recruited. However, the possibility of diminished recruiter effort seems unlikely to affect our results.

First, 1979 posed the greatest recruiting difficulties yet encountered under the all-volunteer force, difficulties fueled by relatively low military pay and favorable employment conditions in the national economy. As a result, 1979 emerged as the only year in which none of the services attained their final accession objectives for nonprior service males. Moreover, this shortfall occurred during a period of misnormed AFQT scores, which had the effect of increasing the *apparent* supply of eligible males, especially those in the lower-AFQT range where one would expect a higher enlistment propensity.

Second, the effects of diminished recruiter effort seem less of a problem in individual data. Even in rich recruiting environments, where exceeding goal should be easy, the recruiter must first *make goal.* The effect of diminished effort, then, would *a priori* be strongest near the end of the recruiting period. We do not know when the individuals in our data met with recruiters, but those arriving in the early part of the period would seldom be apt to encounter unmotivated recruiters, and those arriving near the end of the period might simply be asked to return at the beginning of the next period. Thus, the additive specification seems justifiable, and the supply and demand effects should be clear and not confounded. For seniors and graduates separately, we ran separate regressions for five groups: all, expect more education, do not expect more education, upper-AFQT, and lower-AFQT.

We report the logit regression results (coefficients and t-statistics) in Appendix D. For those familiar with logit analysis, scrutiny of the results can provide insight into the similarity of the responses across and within our senior and graduate segments. However, the general reader, we believe, will find it much easier to absorb the results by viewing the probability patterns implied by the regressions. We have therefore used the separate regressions to predict the enlistment probabilities of "typical" young men in each of the five groups. Our tables show how those predicted probabilities vary as the level of an explanatory variable changes, the other explanatory variables being held constant at preselected values.[2]

The predicted probabilities are illustrative only and would differ were other values chosen. They are not intended to reflect the predicted enlistment probability for the entire market segment as a given variable changes.[3] Still, the predictions help reveal the extent of responsiveness within a group. Because the "typical" person we have defined differs across the groups, comparisons across groups are not straightforward. A probability might differ from group to group because the underlying regression coefficients differ and/or because the "typical" characteristics differ. Table 6 presents the predicted enlistment probability for the "typical" individuals in each group. Using these probabilities and the regression coefficients (Appendix D), we present elasticities for continuous variables to give a sense of the responsiveness of the probability to changes in the variable.[4] Also, we

[2]The explanatory variables were set to values representing the "typical" person in each of five groups (see Appendix E). Because the probability can change greatly depending on employment status and education expectations, it should be remembered in reading the tables that (1) the "typical" senior in all five groups is currently employed as is the "typical" graduate, and (2) because only 40 percent of the graduate population expects more education, the typical graduate (except for the positive education expectations subgroup) has no plans for future schooling. A typical senior in the lower-AFQT group also does not expect to obtain further education.

[3]Within the logit framework, such a prediction can be complicated. Unlike ordinary least squares, prediction at the means with *logit* coefficients does not equal the sample's average probability. Thus, use of sample means would not give an accurate estimate of the predicted probability. This, plus the complicated interactions in our specification, led us to use the method of the typical person to illustrate the effect of our variables.

[4]We compute the elasticity from the logit model as $\beta(1 - p)X$, where b is the regression coefficient, p is the probability of enlistment for our typical individual in the group, and X is the value of the given explanatory variable for the individual. For variables represented in natural logarithms, the elasticity is computed as $\beta(1 - p)$. The elasticity quantifies the percentage change in the probability for a 1 percent increase in an explanatory variable. The logit functional form has the property that the value of the elasticity depends on where the function is evaluated, i.e., on the values of p and X. These, of course, may differ from person to person, so an elasticity based on, say, the average p will not be accurate for persons with higher or lower probabilities (as predicted using the person's own characteristics).

Table 6

PREDICTED PROBABILITY OF ENLISTMENT
FOR TYPICAL INDIVIDUALS

		Expect More Education		AFQT Group	
	All	Yes	No	Upper	Lower
Seniors	.020	.020	.033	.018	.058
Graduates	.024	.054	.015	.016	.027

mention whether a variable has statistical significance; more precise information appears in Appendix D.

RESULTS FOR SENIORS AND GRADUATES

Age When a Senior

We hypothesized that the enlistment probability for seniors would rise with the age of the senior, and the empirical results support this hypothesis (Table 7 and Appendix D). Seventeen year old seniors are significantly less likely to enlist than 18 year old seniors, whereas 19-or-older seniors are significantly more likely. We also hypothesized that the age relationship would be weaker for graduates, and the results agree: there are no notable differences between the enlistment probability of graduates who were 17 versus 18 when they were seniors, or 18 versus 19 or older.

The lack of a significant effect of *age when senior* remains basically true within the other strata of the graduate segment, with only a noticeable pattern of change among graduates who expect more education. Among seniors, the education expectations stratification reveals age effects for each strata, with the strongest seen among those who do not expect more education. The age effect is smaller when individuals are split by AFQT group, but shows a consistent upward trend for the lower-AFQT group. We find this localization of the strongest age effect to be consistent with the notion that *age when senior* helps proxy one's learning proficiency, and that those with higher proficiencies will more likely be college bound.

Table 7

RELATIONSHIP BETWEEN AGE WHEN SENIOR AND ENLISTMENT PROBABILITY

Age When Senior	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Seniors					
17	.020	.020	.033	.018	.058
18	.028	.029	.042	.028	.079
19+	.051	.032	.090	.028	.086
Graduates					
17	.024	.054	.015	.016	.027
18	.023	.066	.011	.022	.019
19+	.021	.039	.020	.016	.015

AFQT Score

Paralleling the age effect, the AFQT effect of those who score in the 31–100 range (category I–IIIB) on enlistment probability appears strong and statistically significant for seniors and weak (virtually no effect) and insignificant for graduates, as a whole (Table 8). Among seniors, the AFQT effect remains negative for both those expecting more education and those who do not; however, the AFQT effect is statistically significant *only* for those who *do not* expect more education. As may be seen, the enlistment probability is lower overall for the *expect more education* group than for the group that does not, so the lack of AFQT effect within the positive education expectations group should be understood as meaning that the enlistment probability is uniformly lower in this group, regardless of the AFQT score; thus, a higher AFQT can do little to further lower the enlistment probability. The strongly negative effect among those seniors who do not expect to obtain further schooling suggests that higher learning proficiency equates to better civilian job opportunities; thus, the propensity to work increases and the propensity to enlist declines (the propensity for school is already low for this group and would be little affected). No significant AFQT effect exists within the AFQT subgroups for seniors. As with the positive education expectations group, the lack of an AFQT effect among the upper-AFQT group is related to the overall lower enlistment probability for that group.

Table 8

RELATIONSHIP BETWEEN AFQT SCORE AND ENLISTMENT PROBABILITY

AFQT Score	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Seniors					
10-30	.012	.010	.009	---	.025
40	.023	.022	.036	---	.058
50	.021	.021	.030	.023	---
60	.019	.020	.024	.021	---
70	.017	.019	.020	.019	---
80	.015	.018	.016	.017	---
90	.014	.017	.013	.015	---
Elasticity	-.578	-.268	-.864	-.754	.202
Graduates					
10-30	.033	.040	.047	---	.024
40	.023	.043	.019	---	.027
50	.024	.049	.016	.014	---
60	.024	.057	.013	.015	---
70	.025	.065	.011	.016	---
80	.025	.075	.009	.018	---
90	.026	.085	.007	.019	---
Elasticity	.134	.778	-1.023	.590	-2.617

The insignificant AFQT effect for graduates as a whole arises because of the competing and opposite effects between the education expectations subgroups. The enlistment probability *increases* with AFQT among graduates who expect more schooling, and *decreases* with AFQT among those with no future schooling plans. Both effects are statistically significant. The strong negative AFQT effect for those expecting no more education parallels that of the seniors—job opportunities and the potential for success in the civilian market increase for those with greater learning proficiencies. The positive AFQT effect for graduates expecting more education may arise because the desire to obtain that expected extra schooling may rise with learning proficiency—the marginal cost of obtaining that schooling should be less for them. As these individuals have been unable to fulfill that desire while in the civilian labor market, they may view the military as the quickest way to meet their educational goals by either letting the military train them for their desired occupation or by taking advantage

of educational benefits offered by the services. As with seniors, AFQT has no significant effect among the upper-AFQT group, but, unlike seniors, AFQT does have a significant negative effect on the enlistment probability of the lower-AFQT group.

AFQT scores in the 10–30 range (category IV) were given special attention in the empirical analysis. As hypothesized, persons scoring in this range frequently would not qualify for military occupational specialties requiring high verbal or quantitative aptitudes, so we expect their enlistment probability to be lower. To account for this, we created a variable indicating whether a person scored in category IV. This explains why the predicted probabilities in the 10–30 range do not follow the smooth pattern witnessed in the higher range, but instead are lower for category IV than would be expected by extrapolating from the higher range. The results confirm a lower enlistment probability for category IVs for seniors and graduates, and the effects are statistically significant.[5]

Live at Home

We hypothesized that seniors living at home would be in a better position to finance subsequent schooling and so be less likely to enlist, and we expected little, if any, effect of this variable on graduates' enlistment behavior. Statistically, the *live at home* variable turned out to be of minimal consequence for seniors as well as graduates.[6] Table 9 documents the impact of this variable; it is also noted that when the value of the *live at home* variable is zero, family income is *also* zero, and when it is equal to one, family income is the average income for the group. Thus, when the predicted probability changes from that for "not at home" to the one for "live at home", the new probability includes the impact of a change in family income from zero to a large positive value. This is why the enlistment probability for those seniors who live at home is noticeably lower (family income has a negative effect on enlistment for seniors) and for graduates it is generally higher (graduates have a slight, positive income effect for most groups).

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[5]In calculating the elasticity for AFQT among the lower-AFQT group, we assumed a base probability for an individual with an AFQT percentile score of 40. The average AFQT for this group is 28 for both seniors and graduates—an AFQT of 28 falls in category IV. No elasticity could be computed based on this value because the AFQT coefficient does not apply to individuals with scores in the category IV range. The value of 40 was chosen because it represents the average AFQT among those in category IIIB (AFQT 31–49 range).

[6]Over 90 percent of seniors live at home, as do 70 percent of graduates.

Table 17

RELATIONSHIP BETWEEN MONTHS ON THE JOB AND ENLISTMENT PROBABILITY FOR THOSE CURRENTLY EMPLOYED

Months on the Job	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Seniors					
3	.025	.031	.043	.025	.057
6	.023	.025	.039	.021	.058
9	.022	.022	.037	.020	.058
12	.021	.020	.035	.019	.058
15	.020	.019	.034	.018	.058
18	.019	.018	.033	.017	.058
Elasticity	-.153	-.315	-.148	-.196	.013
Graduates					
3	.037	.068	.025	.027	.046
6	.019	.045	.012	.013	.018
9	.012	.035	.008	.009	.011
12	.009	.030	.006	.007	.007
15	.006	.023	.004	.004	.004
18	.005	.020	.003	.003	.003
24	.004	.017	.002	.003	.002
36	.003	.015	.002	.002	.002
Elasticity	-.230	-.220	-.170	-.288	-.170

Months Not Employed

An increase in *months not employed* increases the enlistment probability of both seniors and graduates. We hypothesized this effect for graduates but had no specific expectation for seniors. Unemployed graduates, as expected, are more likely to enlist than employed graduates. For graduates overall, the predicted enlistment probability of a "typical" graduate is .024. For an unemployed graduate with one month of unemployment, the predicted probability is .03 and rises to .098 at six months of unemployment.

In our discussion of hypotheses, we argued that the seniors' effect would be ambiguous because the number of months not employed is

effect pervades each of the graduates' groups and in every case has statistical significance. Moreover, in keeping with our earlier comments on education expectations, we find the elasticity of response to *months since school* to be greater among graduates who do not expect more education than those who do: −.69 versus −.33, respectively.

With respect to the results for the next variable, *months on the job* (for those currently employed), we should mention two processes occurring as months since school increase. First, as an individual's labor market experience increases, it provides him with greater capability to search the market, to evaluate job prospects, and to produce on the job. Second, the population of graduates becomes more selected over time, as those with the strongest penchant for further school or for enlistment have already tended to depart the graduate segment, and those with the strongest propensity for "work" remain. Thus, the variable *months since school* controls for the accumulation of human capital of a general (not necessarily firm-specific) nature, and for the increasing selectivity of the graduate segment.

Months on Current Job

We hypothesized that *months on current job* would have a negative effect on the seniors' and graduates' enlistment probabilities, and that the effect would be stronger for graduates. Table 17 clearly confirms the hypotheses, as the elasticity for graduates is over 50 percent higher than that for seniors. In the graduates' regressions, *months since school* helps control for the effect of general human capital. Thus, the statistically significant, negative effect of months on current job implies that *job-specific* aspects also influence the enlistment decision.[19] Both the graduates' and the seniors' results display a greater responsiveness for those with positive education expectations and those in the upper-AFQT group. In fact, job tenure has virtually no relationship with enlistment probability for lower-AFQT seniors, leading to speculation that they more typically hold jobs offering little training or future. In that regard, the upper-AFQT seniors, as well as those expecting more education, may hold superior jobs. As the table indicates, the speculation applies as well to the graduates.

[19] *Months on current job* is expressed in natural logarithm form in the regression analysis. The negative effect of an additional month of job tenure on the propensity to enlist should be strongest for those with short job tenure; given an individual's enlistment propensity at, say, 24 months of job tenure, an additional month will not significantly lower his propensity compared to the drop for an individual initially with two months of job tenure.

willingness to work relatively long hours during the senior year reveals a tendency not to continue immediately with postsecondary schooling, but either to work or to enlist. In our enlist/not enlist model, this manifests itself as an increase in the probability of enlistment because not all of the reduction in the probability of "school" is channeled into an increase in the probability of "work."

A closer look at the seniors' results reveals a major behavioral difference between the education expectation groups. The positive effect of hours originates entirely from the seniors who expect more education, and this underscores the selective nature of the variable. For seniors expecting more education, their working longer hours may frequently signal an intention not to continue directly into postsecondary schooling, but instead to postpone their schooling and to work or enlist in the meantime. In contrast, the timing of further education is not an issue for seniors not expecting more education, and thus it is not surprising to find a lower (although only slightly lower) enlistment probability among those working longer hours. Indeed, this group would seem more comparable to the graduates than would the seniors who expect more education.

Months Since School

As expected, we find a negative relationship between *months since school* and the graduates' enlistment probability (Table 16).[18] The

Table 16

RELATIONSHIP BETWEEN MONTHS SINCE SCHOOL AND ENLISTMENT PROBABILITY

Months Since School	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Graduates					
6	.035	.069	.033	.025	.038
12	.027	.056	.021	.019	.029
18	.023	.049	.016	.016	.025
24	.021	.044	.013	.014	.023
30	.019	.041	.011	.013	.021
36	.018	.039	.010	.012	.020
Elasticity	-.386	-.325	-.694	-.415	-.363

[18]Because *months since school* is entered in natural logarithm form in the regression equation, the effect on longer periods of nonstudent status is dampened.

tively more young men not expecting more education, and of these, relatively more would be seniors than graduates.[17]

Weekly Hours

We hypothesized that the effect of weekly hours of work on the enlistment probability would be negative for graduates and ambiguous for seniors. The results (see Table 15) confirm a negative, significant effect for graduates, an effect which holds overall as well as for each of the graduates' strata. Graduates working longer hours typically have higher weekly and annual earnings (hourly wage constant), and, compared to graduates working shorter hours, will tend to have a stronger revealed preference for work in the civilian sector relative to the alternatives of enlistment or further schooling. In light of the strong, negative effect of hours for graduates, we were struck by the results for seniors, for whom hours have a *positive* effect. This suggests that among seniors, hours behave as a kind of selector variable, whereby a

Table 15

RELATIONSHIP BETWEEN WEEKLY HOURS OF WORK AND ENLISTMENT PROBABILITY

Weekly Hours of Work	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Seniors					
10	.016	.007	.035	.016	.032
20	.019	.020	.034	.018	.050
30	.023	.055	.033	.020	.078
40	.027	.143	.032	.023	.119
Elasticity	.358	2.014	-.06369	.274	1.049
Graduates					
10	.035	.067	.025	.020	.044
20	.031	.063	.021	.019	.038
30	.027	.058	.018	.018	.032
40	.024	.054	.016	.017	.028
Elasticity	-.485	-.305	-.689	-.240	-.661

[17]We also interacted an upper-AFQT indicator with the wage in the expect more education groups. Here, none of the interactions was statistically significant. These and the above results may be obtained from the authors on request.

elasticity for seniors is being driven by those who do not expect more education. Among graduates the same pattern occurs, but the difference in wage elasticities is not as striking. Graduates who do not expect more education have a wage elasticity only twice as high as those who do (−1.08 for those who do not and −.59 for those who do), compared to five times as high between the two senior groups.

Thus, seniors headed for postsecondary schooling not only have a low probability of enlistment but also behave relatively unresponsively to changes in the level of the wage rate on their civilian job. Seniors not headed for further schooling (those presumably more concerned with deciding between employment in the civilian economy and enlistment) are very responsive to wage variation, as one might expect. Graduates who do not expect more education are also relatively responsive, but graduates who do expect more education—and evidently have been unable to satisfy this expectation by whatever experience and training they have acquired on the job—display still less wage responsiveness, as though the wage were a less important consideration in their enlistment decision than the opportunity to obtain training (and educational benefits) through military service.

The results for the AFQT stratification echo the greater wage responsiveness of seniors than graduates. In the upper-AFQT group, the seniors' wage elasticity is more than triple the graduates', and in the lower-AFQT group, the seniors are twice as responsive as the graduates. With respect to the upper-AFQT group, the graduates' wage elasticities lie in the range of estimates from aggregate data studies, but the seniors' elasticities clearly exceed the range. As we have seen, the high value for the seniors derives mainly from the 37 percent who do not expect more education.

Because we had detected a strong interaction of the *expect more education* variable with certain other variables, we thought it likely that even within the AFQT groups, the wage effect would differ depending on education plans. We reran the overall and AFQT regressions (not reported here) with wage interacted with *expect more education* and found statistically significant interactions in every case.[16] As expected, wage responsiveness is greatest among persons not expecting more education, as Table 14 summarizes. This implies that an increase in military pay relative to civilian pay would, other things equal, draw rela-

[16]We calculated an overall elasticity using wage elasticities for the upper AFQT senior and graduate segments broken down by education expectations. The resulting "high quality" wage elasticity is −1.45, lower than the value of −1.56 reported above.

Table 14

RELATIONSHIP BETWEEN HOURLY WAGE AND ENLISTMENT PROBABILITY

Hourly Wage ($)	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Seniors					
2.50	.036	.023	.078	.044	.101
2.75	.029	.022	.058	.032	.080
3.00	.023	.020	.044	.024	.063
3.25	.019	.019	.033	.019	.051
3.50	.016	.019	.026	.015	.042
4.00	.012	.017	.017	.009	.029
4.50	.009	.016	.011	.006	.021
5.00	.007	.015	.008	.004	.016
6.00	.004	.013	.004	.002	.010
7.00	.003	.012	.003	.001	.006
Elasticity	-2.370	-.654	-3.307	-3.339	-2.638
Graduates					
2.50	.045	.075	.031	.032	.059
2.75	.041	.071	.028	.029	.052
3.00	.037	.068	.025	.027	.046
3.25	.035	.065	.023	.025	.042
3.50	.032	.062	.022	.023	.038
4.00	.028	.057	.019	.020	.032
4.50	.025	.053	.016	.018	.027
5.00	.023	.050	.015	.016	.024
6.00	.019	.045	.012	.013	.018
7.00	.016	.041	.010	.011	.015
Elasticity	-.996	-.585	-1.080	-1.014	-1.333

-.996.[15] (The coefficients underlying both elasticities are statistically significant.) However, the results reveal an interesting contrast between the two segments when the data are stratified by education expectations. As the table shows, seniors who expect no more education exhibit a wage elasticity of −3.31, far larger than the −.65 elasticity of seniors who do expect more education. Thus the larger wage

[15]Using microdata on male high school graduates, Daula et al. (1982) found elasticities in the 2 to 3 range for relative pay. They estimated an expected civilian earnings function for their military sample as they had no civilian wage information for them. Their results show that individuals with low expected civilian earnings are more likely to be in the military.

potential of a local market may change as the relative wage changes. The size and nature of that change will depend on the market's senior/graduate mix and its socioeconomic composition.

To cite some other findings, Cotterman (forthcoming), using monthly, state-level data from 1976 to 1981 and employing a methodology that eliminates systematic cross-sectional differences in the wage variation, obtains wage elasticities of about −.5. Brown (1983), with quarterly, state-level observations from the end of 1976 to the middle of 1982, also controls for cross-sectional wage variation and estimates an elasticity of −.6. Ash et al. (1983) use semi-annual observations from 1967 to 1976 and find an elasticity of about −.8, which accords with another estimate of Brown's of −.97 for data from 1965 to 1982. (The Brown and Ash et al. data extend well prior to the volunteer force.) Like Brown, Dertouzos (1985) focuses on the Army, uses monthly observations for 1980 and 1981, and controls for demand-side effects involving the recruiter's allocation of effort among "high quality" and "nonhigh quality" high school graduates. His wage elasticities equal −1.0 for 1980 and −.7 for 1981. With monthly data from 1975 to 1982, Dale and Gilroy (1984) estimate an elasticity in the range of −.9 to −1.7 for Army "high quality" enlistments.

The above aggregate elasticities are based on pooled recruiting markets. While our analysis separates the market into seniors and graduates, we can produce an estimate of an overall wage elasticity through a weighted average of the elasticities from the different segments.[13] Using the elasticities for the total upper AFQT senior and graduate segments, we estimate an overall "high quality" elasticity of −1.56, which is higher than the usual aggregate range.[14] Table 14 displays predicted probabilities and elasticities among the various segments. As in preceding tables, these values are based on "typical" persons. We find overall a greater wage responsiveness for seniors than graduates, the seniors' wage elasticity being −2.37 and the graduates'

[13]The general formula based on two segments is:

$$\eta = (n_1/N)(p_1/P)\eta_1 + (n_2/N)(p_2/P)\eta_2,$$

where n is the segment population, N is the total population over all segments, p is the segment proportion enlisting, P is the population proportion enlisting, and η is the segment elasticity. To calculate a population elasticity from more than two segments, one simply adds more terms and expands the subscripts. Population sizes and enlistment proportions used to calculate the pooled elasticities are presented in Appendix F.

[14]Elasticities for "high quality" seniors and graduates are based on their average enlistment rates, not on those of the "typical" individual. Therefore, the overall elasticity is appropriate for the pooled "high quality" population and is comparable to the aggregate data studies.

socioeconomic aspirations influenced their sons toward enlistment. This reversal, the study suggests, arises because of parental concern about their children's career opportunities, and after the alternative of higher education, parents may consider the armed services "a good place to start." Insofar as higher mother's education is correlated with parents' higher socioeconomic aspirations for their son, our findings accord with the Orkand study. With our sample, however, we cannot quantify the relationship between *mother's education* and variables that one might choose to represent parents' socioeconomic aspirations for their son.

Hourly Wage

Among supply-side variables in aggregate data studies, wage and unemployment variables may be the most prominent. Estimated wage elasticities for "high quality" nonprior service males range from −.5 to −2.0, with most at −1.0 or below. (For example, a one percent increase in the civilian/military wage ratio produces a one-half to two percent decrease in the enlistment rate.) The estimates vary because of differences in data, econometric method, and empirical specification.

These studies, however, cannot control for the individual characteristics and family circumstances of the enlistees, and they typically have not controlled for the socioeconomic composition of the local recruiting market. Our research does control for the individual's socioeconomic characteristics and his employment situation, and we have the further opportunity to estimate wage responsiveness between and within market segments. Thus, we can quantify the wage elasticity for "high quality" males, compare it to that for lower-AFQT high school graduates, and see whether these elasticities differ from those for the education expectations groups.

Aggregate studies employ a surrogate for the individual's wage, namely, a variable such as the average hourly wage in manufacturing. Also, aggregate studies generally rely on pure time-series (national level) data or a time-series of cross sections. Our data are at the individual level at a single point in time. The wage information is accurate for the individual in reflecting his current or recent wage rate, although not necessarily his expected future wage rate. (College-bound seniors, for example, may hold part-time jobs paying the minimum wage.) In addition, our wage variation comes purely from variation across individuals; the military wage is, of course, fixed in the cross section. Given these differences from aggregate studies, our results can help isolate whether market segments differ in their wage responsiveness. Such information can be useful in predicting how the recruiting

expects more education, *mother's education* seems to have no effect on the senior's propensity to enlist. But if the senior does *not* expect more education, then *mother's education* serves to increase greatly his enlistment propensity. The latter presumably reflects parental concern about her son's obtaining further education *or*, if that seems unlikely, obtaining useful training, experience, and career opportunities. If her son does not expect to obtain more education, a mother with higher education apparently expects the military to be a more fruitful source of training and experience for her son than the civilian labor market. Interestingly, the table shows evidence of the same kind of pattern among graduates. *Mother's education* has a small overall positive effect on enlistment, no effect on enlistment in the positive expectations group, and a positive effect in the negative expectations group.

A different pattern arises when the samples are split by AFQT group. In light of the results for the education expectations groups, the effect of *mother's education* on the AFQT groups must be considered a blend of opposing effects. Among seniors, *mother's education* has a positive effect on enlistment in both AFQT groups, with a larger effect in the lower-AFQT group. However, *mother's education* has a negative effect among upper-AFQT graduates and a positive effect among lower-AFQT graduates. The positive effect among the lower-AFQT group suggests that mothers with more education may perceive the schooling or job prospects for a son with low abilities to be poor and encourage his enlistment as a way of obtaining job security and potential training.

The positive effect among upper-AFQT seniors may be driven by those in the group who do not expect more education. Even though only a fourth of the young men in this group do not expect more education, *mother's education* has a strong, positive effect for them which apparently dominates the negative effect for the remainder (who do expect more education.) Similarly, the negative effect among graduates with high AFQTs would indicate that the higher-educated mothers of these young men perceive them to have better civilian job opportunities, which they encourage them to pursue. Such young men may also be more likely to enroll in postsecondary schooling in the near future as they are better able to secure scholarships or to work in good-paying jobs to earn funds for college. The educational benefits of the military and/or the opportunity for training at no cost for tuition or fees may hold little attraction for them.

The empirical results on *mother's education* may be compared with those from the Orkand (1983) study of enlistment "influencers." The study found that parents with high socioeconomic aspirations for their sons influenced them away from enlistment, and parents with lower

Mother's Education

Parents desire good career opportunities for their children. Because there is no generally superior way to satisfy that desire—for some children postsecondary education may be the best avenue; for others, current employment; and for still others, enlistment—we had no clear hypothesis about the effect of *mother's education* on enlistment propensity. We find (Table 13) a positive effect for seniors overall, but the key result is that the effect of *mother's education* differs, depending on the senior's education expectations.[12] Interestingly, if the senior

Table 13

RELATIONSHIP BETWEEN MOTHER'S EDUCATION AND ENLISTMENT PROBABILITY

Mother's Education	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Seniors					
9	.015	.019	.019	.014	.041
10	.016	.019	.025	.015	.049
11	.018	.019	.033	.016	.058
12	.020	.020	.045	.017	.069
13	.022	.020	.060	.019	.081
14	.025	.020	.079	.020	.096
Elasticity	1.28	.091	3.221	.802	1.852
Graduates					
9	.022	.056	.011	.020	.022
10	.023	.055	.012	.019	.024
11	.023	.054	.014	.018	.026
12	.024	.054	.016	.016	.029
13	.025	.053	.018	.015	.031
14	.026	.052	.021	.014	.034
Elasticity	.391	-.165	1.501	-.858	1.037

Therefore, we find little evidence of contamination from including education expectations. Furthermore, because the variable adds substantially to our understanding of enlistment decisions among seniors, and because we suspect that the education expectations of many seniors are already firm before their senior year, we consider the variable valuable to include even though it might bring some bias.

[12]Kim (July 1982) found no significant effect of parental education on the choice of enlist/work/school among the 1978 high school graduating class. However, the sign of the coefficient pointed to a higher probability of enlistment relative to school or work.

Table 12

RELATIONSHIP BETWEEN EXPECT MORE EDUCATION AND ENLISTMENT PROBABILITY

Expect More Education	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Seniors					
Yes	.020	.020	--	.018	.021
No	.036	--	.033	.020	.058
Graduates					
Yes	.038	.054	--	.044	.027
No	.024	--	.015	.017	.027

education expectations have no effect on enlistment probability. These outcomes are in accord with our hypotheses, but we could not anticipate the extent to which education expectations distinguish enlistment behavioral differences among seniors. We see this by comparing the regression coefficients (Appendix D) or the predicted probabilities for the other explanatory variables between those who expect more education and those who do not. As mentioned, we obtain stronger effects of *age when a senior*, *AFQT*, and *family income* for seniors expecting more education than for those who do not. For selectivity reasons, we find fewer such differences among graduates. To help explain why, we recall that although many in the graduate segment *expect* more education, the graduate segment largely omits the seniors who not only expected more education but proceeded directly to obtain it. That is, the graduates consist mostly of those choosing the "work" alternative, so the minor significance of education expectations in distinguishing behavioral differences within this segment should not be surprising.[11]

relative to the probability of entering the labor force, and the probability of enlisting decreased relative to the probability of entering college. In his analysis of noncollege males, Kim (May 1982) found no strong effect of years of desired schooling on the enlist/not enlist decision. Given that this analysis pooled students and nonstudents, the opposite effects for education expectations that we find between the groups would cancel each other and thus leave the appearance of no significant effect.

[11]We recognize that education expectations may be endogenous and jointly determined with the school/work/enlist choice. If so, the coefficient estimates in any regression, including education expectations, could be biased. In work not reported here, we estimated regressions excluding education expectations and found the coefficients and their standard errors to be very similar to those in specifications including this variable.

Table 11

RELATIONSHIP BETWEEN NUMBER OF SIBLINGS AND ENLISTMENT PROBABILITY

Number of Siblings	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Seniors					
0	.015	.012	.028	.008	.063
1	.016	.014	.029	.010	.062
2	.018	.017	.031	.014	.060
3	.020	.020	.033	.019	.059
4	.022	.024	.035	.026	.058
5+	.025	.029	.036	.035	.056
Elasticity	.307	.524	.182	.852	-.084
Graduates					
0	.017	.041	.008	.014	.016
1	.019	.045	.010	.015	.018
2	.021	.048	.012	.016	.021
3	.023	.052	.014	.016	.025
4	.026	.057	.017	.017	.028
5+	.028	.061	.021	.018	.033
Elasticity	.330	.261	.626	.163	.523

seniors who do not expect more education is not statistically significant). What the table also shows, and what was not anticipated by our hypothesis, is an equally strong, positive relationship for graduates. The role of number of siblings apparently extends beyond its being a factor in financing higher education, given that the positive effect is concentrated among those who do *not* expect more education and those in the lower-AFQT group.

Expect More Education

Seniors who expect more education have significantly lower enlistment probabilities than those who do not, and the pattern reverses among graduates (Table 12).[10] Only among lower-AFQT graduates does

[10]In his analysis of new high school graduates (1978 seniors), Kim (July 1982) found that as the number of years of desired schooling rose, the probability of enlisting rose

Table 10

RELATIONSHIP BETWEEN FAMILY INCOME AND ENLISTMENT PROBABILITY

Family Income ($)	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Seniors					
5,000	.046	.044	.083	.037	.121
10,000	.030	.036	.038	.031	.099
15,000	.026	.030	.036	.026	.079
20,000	.023	.025	.034	.023	.062
25,000	.020	.021	.032	.019	.049
30,000	.017	.018	.030	.016	.039
Elasticity	-.679	-.956	-.261	-.855	-1.016
Graduates					
5,000	.018	.025	.015	.007	.027
10,000	.023	.052	.015	.015	.028
15,000	.024	.053	.015	.016	.027
20,000	.024	.054	.015	.016	.026
25,000	.024	.055	.015	.017	.026
30,000	.024	.055	.014	.017	.025
Elasticity	039	.064	-.068	.134	-.123

because even in the lower-AFQT group many seniors have positive education expectations (Table 5).

Number of Siblings

As the number of brothers and sisters increases, the family has less money available to finance a senior's higher education.[8] Consequently, we hypothesized that, holding family income constant, an increase in the number of siblings would increase the enlistment probability. The regression results confirm this hypothesis, and Table 11 displays the positive relationship between siblings and enlistment probability.[9] Only among seniors in the lower-AFQT group does the number of siblings have no impact on the enlistment probability (however, the effect for

[8]We recognize that sibling ages, spacing, and sex ratio could also affect one's enlistment propensity. Our data, however, only include the number of siblings.

[9]Kim (July 1982) also found a strong positive effect on the enlistment probability for those just graduating from high school.

Table 9

RELATIONSHIP BETWEEN LIVE AT HOME AND ENLISTMENT PROBABILITY

Live At Home	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Seniors					
Live at home					
Yes	.020	.020	.033	.018	.058
No	.032	.043	.083	.044	.092
Graduates					
Live at home					
Yes	.024	.054	.015	.016	.027
No	.022	.045	.013	.011	.035

Family Income

Table 10 displays a pattern suggesting that one role of family income is to finance higher education, and that the effect is concentrated among seniors who expect more education. For seniors, we anticipated a negative effect of family income on enlistment probability, and the results reveal considerable decline in the probability as income rises. Recognizing that seniors who chose to obtain postsecondary education have been largely eliminated from the graduate segment, we further anticipated a weaker income effect among graduates. Actually, the relationship between family income and enlistment probability is nearly flat for graduates and not statistically significant.

Among seniors, the negative effect of family income appears strongest for those who expect more education and is practically absent from those not expecting more education.[7] We find a stronger effect among the lower-AFQT group than the upper, but the difference in the pattern is not as great as between the two education expectations groups. The greater similarity among the AFQT groups probably occurs

[7]The high probability for the lowest income value among seniors not expecting more education and the low probability for that group among graduates expecting more education is a consequence of the manner in which we defined family income variables. Individuals with family incomes below $5,200 (the lowest income category in our data) were assigned an indicator variable and then had their value for the family income variable set to zero. In these two samples the effect of that low-income indicator was large relative to the other sample groups. When the probability is computed for the $5,000 category, the probability is affected only by the low-income coefficient and the effect for linear income is not used.

not necessarily a sign of duress for them. To the contrary, the seniors might merely be concentrating on their studies and school activities. We find that unemployed seniors are less likely to enlist than employed seniors: the predicted probability of a "typical" (employed) senior is .02 versus .007 were he unemployed for one month. Yet as *months not employed* increases, so does the predicted enlistment probability. By six months not employed, the probability has risen to .022, i.e., the same level as for the "typical" senior.

The grouping of seniors by education expectations provides additional insight. Seniors who expect more education would be more likely to concentrate on their studies and less likely to be affected by time since last working, hence the effect of *months not employed* should be less for them than for seniors not expecting more education. The empirical results support this view (Table 18).[20] Although seniors who expect more education are more likely to enlist the more months since they have been employed, the corresponding effect is far stronger for seniors not expecting more education. Also, as one would expect, a similar pattern holds for the upper- versus lower-AFQT seniors.

Among graduates, the differences across the subsegments do not appear as prominent. For both graduates and seniors, the lower-AFQT group has the greatest increase in enlistment probability in response to another month of joblessness. However, graduates respond nearly the same in both education expectation groups; that is, doubling the months not employed from two to four raises the enlistment probability by 50 percent.[21]

Race/Ethnicity

Relative to white non-Hispanics, black and Hispanic seniors have higher enlistment probabilities, controlling for their socioeconomic background and employment situation (Table 19). Among seniors, much of this overall effect emanates from the negative education expectations and the lower-AFQT groups, which suggest (but do not prove) that labor market opportunities are differentially worse for

[20]Probabilities for *months not employed* include the effects of the variables *currently unemployed but worked in last 12 months* and *hours/week worked at last job*, which help account for the higher probabilities among graduates. The strong negative effect of the former helps account for the lower senior enlistment probability relative to that of the typical senior.

[21]The regression also contains a variable for weekly hours of work on the last job, for those not currently working but who worked in the past 12 months. This variable is statistically insignificant for seniors and *positive* and significant for graduates. Given that they are jobless, graduates who worked longer hours (and who presumably experience greater earnings losses from unemployment) are more apt to enlist.

Table 18

RELATIONSHIP BETWEEN MONTHS NOT EMPLOYED AND ENLISTMENT PROBABILITY FOR THOSE NOT CURRENTLY EMPLOYED

Months Not Employed	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Seniors					
1	.007	.008	.002	.008	.004
2	.009	.009	.004	.010	.008
3	.011	.010	.007	.011	.014
4	.014	.011	.014	.014	.024
5	.017	.013	.026	.016	.042
6	.022	.015	.050	.019	.073
Elasticity	1.106	.669	2.774	.905	2.284
Graduates					
1	.030	.079	.035	.031	.023
2	.038	.097	.044	.036	.034
3	.048	.118	.053	.042	.050
4	.061	.143	.065	.048	.073
5	.078	.172	.080	.056	.104
6	.098	.206	.097	.065	.148
Elasticity	.649	.531	.552	.488	.840

Table 19

RELATIONSHIP BETWEEN RACE/ETHNICITY AND ENLISTMENT PROBABILITY

Race/ Ethnicity	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Seniors					
White	.020	.020	.033	.018	.058
Black	.032	.018	.094	.021	.106
Hispanic	.031	.013	.163	.014	.125
Graduates					
White	.024	.054	.015	.016	.027
Black	.038	.086	.017	.040	.026
Hispanic	.019	.039	.021	.010	.019

minority seniors who have no future education plans or who are in the lower-AFQT group than they are for minority seniors who expect to obtain more schooling or who are in the upper-AFQT group.

For graduates, the effect of the Hispanic variable is small and not significant, and although blacks remain more likely to enlist than whites, the difference now derives from the group expecting more education or, concomitantly, the upper-AFQT group. This suggests that while as seniors their optimism for college or the civilian job market was high, experience in the labor market may have led black graduates to view their continued future in that market as less promising than when they left high school. For them, the military may now appear to offer better opportunities in the long run.

Recruiter Density

We included this variable to test whether a higher ratio of recruiters per male youth population would increase an individual's enlistment probability. The empirical results showed no effect for any of the groups, with the exception of upper- and lower-AFQT graduates.[22] For these graduates, higher recruiter density increases the enlistment probability in the upper-AFQT group and decreases that in the lower. The latter is an anomalous result, the recruiters having little incentive in 1979 to substitute upper-AFQT enlistees for lower. We believe the poor performance of the recruiter density variable results from inadequate data. Services allocate recruiters largely on the basis of youth population, so the *ratio* of recruiters to male youth populations is nearly the same across all recruiting areas. (Our recruiting areas are the Military Enlistment Processing Station (MEPS) areas.) For instance, a regression of the number of production recruiters in a MEPS in Spring 1979 on the high school population in that area produces an R^2 of .97.[23] With no variation, effects cannot be measured.

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[22]The effect is significant for lower-AFQT graduates ($t = -2.79$) and approaches significance for the upper-AFQT group ($t = 1.39$).

[23]The coefficients and t-statistics for that regression are:

$$\underset{}{\text{Recruiters}} = \underset{(1.36)}{6.44} + \underset{(41.1)}{.00338}\ \text{high school population}$$

The same story holds if we replace high school population by male youth population age 15–24. Also, other coefficients are unaffected by either the inclusion or exclusion of the recruiter density variable.

Share of Seniors and Recent High School Graduates in the Local Market

This variable is defined as the number of high school seniors and recent (within one year) graduates in a local recruiting market, relative to the number of young men age 15–24 residing in that market. We hypothesized that the *share of seniors and recent graduates* would have no effect on the enlistment probability of seniors, and a negative effect on that of graduates. The overall results (Table 20) confirm these hypotheses. Although the share variable has a negative effect for both seniors and graduates, it is statistically significant only for the latter, whose coefficient is also larger. Differential effects, however, exist between AFQT groups. The share variable is nearly significant for upper-AFQT seniors ($t = -1.50$), and therefore exhibits a definite negative pattern among the predicted enlistment probabilities. Among graduates, the variable's effect is considerably greater for upper-AFQT graduates than for lower. These differential effects by AFQT can be

Table 20

RELATIONSHIP BETWEEN MARKET SHARE OF SENIORS AND RECENT HIGH SCHOOL GRADUATES AND ENLISTMENT PROBABILITY

Market Share	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Seniors					
.12	.023	.020	.035	.026	.066
.14	.021	.020	.034	.021	.060
.16	.019	.020	.033	.017	.055
.18	.017	.020	.032	.013	.050
Elasticity	-.706	.030	-.265	-1.665	-.672
Graduates					
.12	.052	.088	.047	.050	.035
.14	.033	.063	.025	.026	.029
.16	.020	.044	.013	.013	.024
.18	.012	.031	.007	.007	.020
Elasticity	-3.665	-2.600	-5.053	-5.183	-1.355

cast within the theory behind the hypotheses. If, as shown by Dertouzos (1985), the upper-AFQT youths are more costly to recruit, the recruiter will tend to recruit more lower-AFQT youths when, as in 1979, there was no explicit goal for upper-AFQT recruits.

Consistent with the hypotheses, a relative abundance of seniors in a local market allows the recruiter to recruit more seniors and fewer graduates. The increase in seniors' enlistments seems to occur not because the recruiter increases the enlistment probability of any given senior, but because he reaches more seniors. The results further suggest that among either market segment, recruiters tend to reduce their effort more in the upper-AFQT group than the lower, the upper-AFQT group being presumably harder to recruit.

Corroborative evidence for the different effects between the senior and graduate segments comes from auxiliary data in the AFEES survey. Enlistees were asked how their first and second recruiter contacts originated: Did they contact (call or visit) the recruiter? Did the recruiter contact them? Or was there some other means such as the recruiter visiting the high school? As Table 21 shows, graduates were far more likely to initiate contact than seniors, and seniors were far more likely to have been contacted by recruiters or to have met them during visits to the high school. This is the pattern one would expect given the centralized nature of the high school segment and regular visits to it by recruiters, as compared to the decentralized nature of the graduate segment and the apparently greater effort required for the recruiter to initiate contact.

Table 21

ORIGINATION OF FIRST AND SECOND RECRUITER CONTACT

Origin	First Contact (Percent)	Second Contact (Percent)
Seniors		
By individual	37	40
By recruiter	28	27
Other means	36	31
	100	100
Graduates		
By individual	68	69
By recruiter	13	14
Other means	18	17
	100	100

NOTE: Percentages may not add to 100 due to rounding.

V. CONCLUSIONS

IDENTIFYING LIKELY RECRUITING PROSPECTS

We have argued that the male youth population consists of subpopulations which may be described by a model of sequential decisionmaking involving school, work, and enlistment choices. Nonstudent high school graduates, in particular, comprise a selected subpopulation, most of whom chose not to continue their formal education after high school. Given that observation, we expected the enlistment behavior of these nonstudent graduates to differ from that of the seniors, and our empirical results confirm that it does. Moreover, we find considerable differences within the seniors and the graduates depending on education expectations. The empirically determined difference in the enlistment behavior of seniors and graduates who do or do not expect more education justify viewing these groups as distinct segments of the recruiting market. Although their effects vary between and, to a lesser extent, within the senior and graduate segments, we find the following variables to be significant determinants of enlistment decisions: age when a senior, AFQT score, family income, number of siblings, education expectations, mother's education, hourly wage, weekly hours, labor force experience (among graduates), job tenure, and, for those not currently employed, duration of joblessness. In addition to these supply-side variables, certain demand-side variables were important—namely, the indicator for AFQT category IV (which bears on the individual's eligibility for military occupational specialties), and the share of seniors and recent high school graduates in the local youth population. Because of data limitations, we were unable to determine the effect of recruiter density on enlistment probability.

Beyond the questions of market segmentation and the specific determinants of enlistment, the usefulness of the analysis depends on whether the estimated models of enlistment choice can successfully discriminate the more-likely from the less-likely recruiting prospects. Even though the preceding variables achieve statistical significance, their *practical* significance depends on the range of variation in the predicted probability of enlistment. If the enlistment probability at the upper end of the range is only slightly higher than that at the lower end, then the results have minor practical significance. To examine this aspect, we predict the enlistment probability for each senior and graduate, given the values of his explanatory variables, and then array

the predicted probabilities into deciles.[1] The results, presented in Table 22, are based on the overall regressions, not the within-segment regressions, for seniors and graduates.

The table shows that a senior in the 8th decile[2] is, on average, *five* times more likely to enlist than a senior in the 2nd decile. A graduate in the 8th decile is *six* times more likely to enlist than one in the 2nd decile. Thus, our model affords a wide range of variation in the predicted probability, with some persons predicted to be far more likely to enlist than others. The graduate distribution noticeably diverges from the senior distribution above the 5th decile, with graduates in the 10th decile having an average enlistment probability almost nine times higher than the 5th decile, while seniors in the 10th decile are only six times more likely to enlist than those in the 5th decile.

APPLICABILITY OF FINDINGS

The capability of our regression models to distinguish the enlistment probability of recruiting prospects may be helpful in both recruiter training and recruiter management. Our empirical results, and the

Table 22

AVERAGE PREDICTED ENLISTMENT PROBABILITY WITHIN DECILE

Decile	Seniors	Graduates
1	.0043	.0052
2	.0082	.0096
3	.0126	.0139
4	.0171	.0183
5	.0224	.0231
6	.0281	.0305
7	.0350	.0407
8	.0456	.0576
9	.0630	.0832
10	.1306	.1913

[1]The predictions are based on the NLS observations and then weighted by the NLS weights, making the set of weighted predictors approximately representative of the male youth population, age 17-22, in each segment.

[2]An individual in the 8th decile has an enlistment probability in the 71st to 80th percentile range of the probability distribution. The predicted probability presented in Table 22 is the average among the individuals whose predicted enlistment probabilities fell within the 71st to 80th percentiles. Ten percent of the population falls within each decile, thus, for example, 70 percent of the population lies below the 8th decile.

AFEES-NLS database underlying them, might be a worthwhile, quantitative complement to the curriculum for training recruiters. Our findings highlight the behavior differences in the major segments of the recruiting market, and provide guidance to recruiters in developing rules of thumb that may be used to "size up" recruiting prospects and to estimate the yield from a portfolio of recruiting contacts. Although the actual experience of recruiting undoubtedly contributes to the development of such rules, use of our results may speed the process. It may not be clear to recruiters at the outset of their tours, for example, that although seniors expecting more education are less likely to enlist, graduates expecting more education are more likely to enlist; or that seniors from higher income families have lower enlistment probabilities unless they happen to come from a large family; or that a graduate's enlistment probability is unrelated to family income; or that wage and employment sensitivity differ considerably by market segment and subgroup.

In a related vein, aggregate data counterparts to the variables in our microanalysis may improve the capability of recruiter managers to estimate and understand the recruiting potential of local markets. Here, aggregate variables on family income, number of seniors and recent graduates relative to the total male youth population, average number of siblings, and education expectations deserve mention, along with the possibility of procuring estimates of these variables separately for the senior and graduate segments. As has been mentioned in aggregate studies themselves, more precise information on the earnings and employment opportunities of youth would also be desirable. This kind of variables may also enrich the forecasting capability of aggregate data models, especially in instances where the models are applied to obtain forecasts by recruiting area, for use in the allocation of recruiting resources.

More generally, the methodology for creating and analyzing the choice-based AFEES-NLS database can be applied elsewhere. One can envision choice-based samples being derived from coordinated surveys of the youth population and military applicants or enlistees, a procedure that need not lessen the scope of either survey but which could enhance the return to both. Of course, the approach can be applied to analyze reenlistment decisions as well as enlistment decisions, for men or women, and for the reserve forces as well as the active. Moreover, an attractive feature of the AFEES-NLS approach is that both the AFEES and NLS observations have been followed through time, each in effect being a longitudinal survey. This permits further analyses related to enlistment to be performed—specifically, the joint analysis of enlistment and first-term attrition, and subsequently of first-term

reenlistment. Unlike previously available data, the AFEES-NLS data control for the individual's socioeconomic background, education expectations, and employment situation prior to enlistment. These variables may prove insightful in anticipating an individual's likely success in the military (see Buddin, 1984). Finally, the choice-based method provides sufficient observations for analyses beyond the simple enlist/not enlist dichotomy. Current work is investigating the individual's choice of service and choice of military occupational area using the AFEES-NLS database.

Appendix A

GLOSSARY OF VARIABLES

1. Age when a high school senior	Age of the individual when a senior in high school. Entered as two indicator variables for age 17 and for age 19 and over, with age 18 as the comparison or left out group. In the graduate sample, those who received a GED and left high school before age 17 have no age value for when they were a senior because they never were a senior. The GED variable controls for their lack of an an "age when senior" variable. Those with more than 12 years of schooling also do not have a value for age when a senior, because the AFEES survey (enlisted sample) has no information on when an individual last attended high school if he has postsecondary schooling. An indicator variable for postsecondary schooling controls for this situation.
2. AFQT percentile	Percentile score of the (correctly normed) Armed Forces Qualification Test (AFQT), based on the 1979 ASVAB (Armed Services Vocational Aptitude Battery) for the AFEES (enlisted sample) and on 1980 ASVAB scores for the NLS (nonenlisted sample). This variable is zero for those with AFQT percentile scores of 10 to 30 (category IV). The category IV indicator variable controls for these zero values. Individuals with percentile scores of less than 10 (category V) were excluded from the data because such individuals are not eligible to enlist.

3. Lives at home	Indicator for whether the individual still lives with parents or guardians.
4. Family income	Parental income in dollars given that the individual lives with his parents. Values represent midpoints of income ranges that define the income category associated with the individual. The value of this variable is zero if the parental income is below $5,200 a year (the lowest income category); the "low income" indicator variable controls for these zero values. If the individual does not live with his parents, the value of parental income is zero.
5. Number of siblings	Number of brothers and sisters the individual has regardless of whether they still live at home.
6. Expects more education	Indicator for whether the individual's expected years of schooling exceed the number of years he has already completed.
7. Mother's education	Years of schooling attained by the individual's mother.
8. Some postsecondary schooling	Indicator whether the individual has completed more than 12 years of schooling; applicable only to the graduate sample.
9. Months since last attended school	Natural log of the number of months since the individual was last enrolled in school—high school or college; applicable only to the graduate sample.
10. Hourly wage	Natural log of hourly wage the individual received at his current or last job held. In the senior sample, the value of this variable is zero for those with an hourly wage of less than $2.25/hour, as are all of the employment-related variables. Seniors with such extremely low hourly wages are anomalies and have been effectively removed from the estimation of the wage effect by zeroing out their values and including an indicator for such low wages.

11. Weekly hours, if currently employed	Number of hours per week the individual works if he is working at the time of the survey. (Individuals from the AFEES survey were considered to be currently working if they had left their job within the last month but were not currently employed when they took the AFEES survey.) Variable is zero if not currently employed.
12. Months on job, if currently employed	Natural log of the number of months the individual has been working on his current job. The value of this variable is zero if the individual is not currently employed.
13. Worked in past year, not currently employed	Indicator for whether the individual had a job within the last 12 months but is not currently working.
14. Weekly hours, not currently employed	Number of hours per week the individual worked at his last job if not currently working but had a job within the last 12 months. Value of variable is zero if currently employed.
15. Months not employed	Number of months since the individual's last job if he is not currently employed but had worked within the last 12 months. Value of variable is zero if currently employed.
16. Not employed within past year	Indicator for whether individual did not have a job during the last 12 months.
17. Ethnic group—black	Indicator for whether the individual is black.
18. Ethnic group—Hispanic	Indicator for whether the individual is Hispanic.
19. AFQT category IV	Indicator for whether the individual's AFQT percentile was in the 10–30 range.

20. Share of seniors and recent high school graduates in local market	Proportion of male youth population aged 15–24 in the MEPS (Military Enlistment Processing Station) area who are high school seniors or graduated from high school in the previous year. Population figures are for 1978. (Descriptions of these population counts are provided in Hosek and Peterson (1983).)
21. Recruiter density	Recruiter density within a MEPS is defined as the number of production recruiters per male aged 15–24 in the MEPS. The number of recruiters per MEPS was provided by the Defense Manpower Data Center and is for the Spring of 1979.
22. GED	Indicator for whether the individual left high school before age 17 and later received a Certificate of General Educational Development; applicable only to the graduate sample.

The following variables were included in the regression specifications as controls for missing variables or for unusually low values:

23. Lowest family income	Indicator for whether parental income was under $5,200 a year if the individual lived with his parents. We view these low income values as aberrations and chose to control for them separately to get a more accurate estimate of the effect of family income.
24. Wage less than $2.25/hr	Indicator for whether the individual's hourly wage was less than $2.25. This variable is applicable only to the senior sample. All the employment variables in the senior equation are zero when this variable is equal to one.
25. Family income missing	Indicator for whether information on parental income was missing given that the individual lived with his parents. The values for parental income and lowest income group are zero when this variable is equal to one.

26. AFQT missing — Indicator for whether information on the individual's AFQT percentile was missing. The values of AFQT and lowest AFQT category are zero if this variable is equal to one.

Except for AFQT and family income, missing values were replaced with the sample means relative to each choice. Individuals lacking information on student status, level of education, or employment status were excluded from the analysis.

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Appendix F

POPULATION AND ENLISTMENT RATE BY EDUCATION EXPECTATIONS

Segment	Population	Enlistment Rate
Seniors		
Expect more education		
Yes	976,000	.030
No	575,000	.056
All	1,551,000	.039
Graduates		
Expect more education		
Yes	1,211,000	.082
No	1,786,000	.033
All	2,997,000	.053

II. Characteristics for Graduates

Variable	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Age when senior	17	17	17	17	17
AFQT	55	56	53	71	40
Live at home	1	1	1	1	1
Family income	19700	19660.	19800	20800	18300
No. siblings	3.3	3.3	3.3	3.0	3.6
Expect more ed.	0	1	0	0	0
Mother's ed.	11.7	12	11.4	12	11.3
Some postsec. ed.	0	0	0	0	0
Ln mos. since sch.	2.79	2.59	2.94	2.83	2.74
Ln hourly wage	1.550	1.497	1.591	1.579	1.513
Wkly hours emp.	41.6	40.9	42.1	41.5	41.7
Ln months on job	2.83	2.75	2.88	2.87	2.75
Not curr. emp.	0	0	0	0	0
Wkly hrs, not emp	0	0	0	0	0
Months not emp.	0	0	0	0	0
Not emp. last yr.	0	0	0	0	0
Black	0	0	0	0	0
Hispanic	0	0	0	0	0
AFQT cat. IV	0	0	0	0	0
Share seniors	.153	.149	.156	.153	.149
Recruiter density	.00053	.00053	.00053	.00053	.00053
GED	0	0	0	0	0
Low fam. income	0	0	0	0	0
Fam. inc. missing	0	0	0	0	0
AFQT missing	0	0	0	0	0

Appendix E

CHARACTERISTICS OF "TYPICAL" PERSON USED IN PROBABILITIES

I. Characteristics for Seniors

Variable	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Age	17	17	17	17	17
AFQT	55	62	44	73	40
Live at home	1	1	1	1	1
Family income	25000	27300	20800	27100	21500
No. siblings	3	3	3.4	2.8	3.6
Expect more ed.	1	1	0	1	0
Mother's ed.	12	12.6	11	12.5	11
Ln hourly wage	1.163	1.160	1.179	1.188	1.131
Wkly hours, emp.	22	19.7	25.3	21	23.5
Ln months on job	2.67	2.56	2.81	2.66	2.69
Not curr. emp.	0	0	0	0	0
Wkly hrs, not emp.	0	0	0	0	0
Months not emp.	0	0	0	0	0
Not emp. last yr.	0	0	0	0	0
Black	0	0	0	0	0
Hispanic	0	0	0	0	0
AFQT cat. IV	0	0	0	0	0
Share seniors	.151	.150	.153	.153	.148
Recuiter density	.00053	.00053	.00053	.00053	.00053
Wage < $2.25/hr	0	0	0	0	0
Low fam. income	0	0	0	0	0
Fam. inc. missing	0	0	0	0	0
AFQT missing	0	0	0	0	0

II. Results for Graduates
(t-statistics)

Variable	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Black	.467	.510	.148	.906	-.027
	(2.19)	(1.93)	(.36)	(2.23)	(−.10)
Hispanic	−.214	−.342	.348	−.477	−.363
	(−.70)	(−.91)	(.77)	(−1.07)	(−.80)
AFQT cat. IV	−.190	.209	−1.145	n.a.	−2.789
(Score 10–30)	(−.57)	(.44)	(−2.25)		(−2.48)
Share of seniors	−24.543	−18.436	−32.886	−34.449	−9.341
and recent grads	(−5.42)	(−2.92)	(−4.64)	(−5.16)	(−1.36)
(proportion)					
Recruiter	−.257	−.287	−.845	2.425	−6.440
density	(−.20)	(−.17)	(−.32)	(1.39)	(−2.79)
(per thousand					
population)					
GED	.787	−.103	2.275	.674	1.302
	(2.55)	(−.23)	(5.31)	(1.47)	(2.65)
Sample size	2187	1134	893	1095	885

NOTE: Regression is based on a sample of 2187 graduates (1419 enlistees and 768 nonenlistees). Regression also includes indicator variables for low family income, income missing, and AFQT missing. Coefficients and t-statistics for these variables are available on request. Regression coefficients could not be estimated for variables with empty cells for either choice as such variables become "perfect predictors" in the logit model with infinite magnitude. In such cases, the coefficient field is filled with "—". Levels of significance: .05 $t = \pm 1.96$; .01 $t = \pm 2.58$.

II. Results for Graduates (t-statistics)					
		Expect More Education		AFQT Group	
Variable	All	Yes	No	Upper	Lower
Constant	3.057	1.928	4.827	3.794	6.458
	(3.28)	(1.48)	(3.70)	(2.59)	(3.55)
Age when senior					
Age 17	.024	−.219	.323	−.309	.358
	(.16)	(−1.05)	(1.35)	(−1.35)	(1.43)
Age 19+	−.098	−.542	.597	−.331	−.252
	(−.42)	(−1.68)	(1.55)	(−.82)	(−.73)
AFQT score	.0025	.0147	−.0196	.0084	−.0672
	(.52)	(2.26)	(−2.49)	(1.04)	(−2.34)
Live at home	.042	.108	.212	.283	−.139
	(.19)	(.36)	(.58)	(.87)	(−.38)
Family income (in thousands)	.0020	.0034	−.0035	.0065	−.0069
	(.28)	(.34)	(−.27)	(.62)	(−.50)
Number of siblings	.102	.083	.193	.055	.149
	(2.95)	(1.58)	(4.29)	(1.01)	(3.67)
Expect more education	.465	n.a.	n.a.	1.004	.014
	(3.45)			(4.77)	(.06)
Mother's education	.034	−.015	.134	−.073	.094
	(1.22)	(−.41)	(3.20)	(−1.58)	(2.34)
Some postsecondary education	−.641	−.560	−.684	−1.010	−.245
	(−2.49)	(−1.89)	(−1.58)	(−3.10)	(−.66)
Ln months since school	−.395	−.344	−.705	−.422	−.373
	(−5.23)	(−3.50)	(−5.49)	(−3.73)	(−2.97)
Ln hourly wage	−1.026	−.618	−1.102	−1.028	−1.368
	(−4.49)	(−1.87)	(−3.91)	(−2.82)	(−4.06)
Weekly hours, employed	−.012	−.008	−.017	−.006	−.016
	(−1.33)	(−.69)	(−1.58)	(−.45)	(−1.06)
Ln months on job, employed	−.236	−.233	−.173	−.293	−.175
	(−3.76)	(−2.88)	(−1.73)	(−3.16)	(−1.67)
Not currently employed	−3.072	−2.730	−1.737	−3.692	−3.437
	(−3.93)	(−2.78)	(−1.59)	(−3.28)	(−2.85)
Weekly hours, not currently employed	.052	.055	.033	.063	.048
	(3.33)	(2.59)	(1.49)	(3.96)	(2.02)
Months not employed	.252	.221	.215	.159	.396
	(4.35)	(2.78)	(2.48)	(1.75)	(5.60)
Not employed last 12 months	−.824	−.599	—	−.832	−.834
	(−1.47)	(−.79)		(−1.00)	(−1.01)

I. *Results for Seniors*
(*t*-statistics)

Variable	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Months not employed	.234 (4.25)	.133 (1.80)	.671 (5.16)	.171 (2.17)	.571 (4.81)
Not employed last 12 months	−2.276 (−3.10)	.630 (.56)	−2.816 (−2.46)	−3.521 (−2.97)	−1.632 (−1.53)
Black	.465 (2.18)	−.075 (−.24)	1.097 (3.06)	.149 (.36)	.649 (2.23)
Hispanic	.431 (1.69)	−.389 (−.99)	1.73 (4.26)	−.280 (−.61)	.842 (2.38)
AFQT cat. IV (Score 10–30)	−1.078 (−3.04)	−.912 (−1.73)	−2.202 (−3.64)	n.a.	−.668 (−1.41)
Share of seniors and recent grads (proportion)	−4.772 (−.99)	.204 (.03)	−1.791 (−.22)	−11.080 (−1.49)	−4.822 (−.60)
Recruiter density (per thousand population)	.592 (.48)	−2.228 (−1.10)	1.831 (.74)	1.639 (.84)	.056 (.030)
Sample size	1784	881	801	810	834

NOTE: Regression is based on a sample of 1784 seniors (1336 enlistees and 448 nonenlistees). Regression also includes indicator variables for wage less than $2.25/hr, low family income, income missing, and AFQT missing. Coefficients and *t*-statistics for these variables are available on request. Regression coefficients could not be estimated for variables with empty cells for either choice as such variables become "perfect predictors" in the logit model with infinite magnitude. In such cases, the coefficient field is filled with "—". Levels of significance: .05 $t = \pm 1.96$; .01 $t = \pm 2.58$.

Appendix D

LOGIT REGRESSION RESULTS FOR SENIORS AND GRADUATES

I. Results for Seniors
(*t*-statistics)

Variable	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Constant	−.211	−2.371	−.968	1.662	−1.350
	(−.18)	(−1.45)	(−.51)	(.94)	(−.74)
Age when senior					
Age 17	−.361	−.400	−.237	−.451	−.322
	(−2.30)	(−1.81)	(−.84)	(−2.02)	(−1.28)
Age 19+	.602	.097	.815	—	.093
	(2.36)	(.23)	(2.08)		(.28)
AFQT score	−.0107	−.0044	−.0203	−.0105	.0054
	(−2.00)	(−.59)	(−2.06)	(−1.20)	(.26)
Live at home	.208	.175	−.687	−.052	.580
	(.62)	(.42)	(−1.29)	(−.09)	(1.22)
Family income (in thousands)	−.028	−.086	−.013	−.032	−.050
	(−3.50)	(−3.22)	(−.92)	(−3.08)	(−3.26)
Number of siblings	.104	.184	.055	.310	−.025
	(2.74)	(3.44)	(1.02)	(5.47)	(−.50)
Expect more education	−.598	n.a.	n.a.	−.079	−1.075
	(−3.58)			(−.28)	(−4.21)
Mother's education	.109	.007	.303	.065	.179
	(3.34)	(.16)	(4.58)	(1.37)	(3.67)
Ln hourly wage	−2.416	−.687	−3.416	−3.402	−2.804
	(−4.29)	(−.93)	(−3.62)	(−3.71)	(−3.13)
Weekly hours, employed	.017	.104	−.003	.013	.047
	(1.15)	(6.19)	(−.17)	(.83)	(3.19)
Ln months on job, employed	−.156	−.321	−.153	−.200	.014
	(−1.84)	(−2.42)	(−1.16)	(−1.40)	(.11)
Not currently employed	−1.208	−.429	−2.045	−1.410	−1.743
	(−2.14)	(−.64)	(−2.12)	(−1.84)	(−1.66)
Weekly hours, not currently employed	−.006	.022	−.054	.006	−.010
	(−.59)	(1.69)	(−2.48)	(.44)	(−.70)

Table C.1

POPULATION AND SAMPLE ENLISTMENT PROPORTIONS

Segment	Population Proportion Enlisting	Sample Proportion Enlisting
Seniors		
Expect more education		
Yes	.030	.686
No	.056	.788
AFQT		
Upper	.033	.753
Lower	.047	.737
All	.039	.749
Graduates		
Expect more education		
Yes	.082	.701
No	.033	.534
AFQT		
Upper	.051	.669
Lower	.055	.637
All	.053	.649

Appendix C

ESTIMATION METHODOLOGY

We use the logit function in our maximum-likelihood model estimation. The enlistment probability of an individual with characteristics X is defined as $p = 1/(1 + e^{-\beta X})$. From the logit function we create a likelihood function for each observation adjusted for choice-based sampling. The individual likelihoods are then multiplied to form the likelihood to be maximized over the sample. The log likelihood of the sample, correcting for the oversampling of enlistees and recognizing that both the AFEES and NLS surveys are in effect stratified random samples, has the following form:

$$ln\ L = \sum w_i ln(p_i) + \sum w_i ln(1 - p_i)$$

where the $\sum$'s sum over the individual log likelihoods of the enlistees (denoted by the range $i = 1, \ldots, n_1$) and the nonenlistees ($n_1 + 1$ to N). (For simplicity, we have excluded a term involving the probability of sampling an individual; this term is not a function of β and plays no part in the maximization of L with respect to β.) We express the enlistment probability of an enlistee by p_i, which depends on the individual's characteristics X. Similarly, the nonenlistment probability of a nonenlistee is $(1 - p_i)$. Following Manski and Lerman (1977), for the enlisted sample w_i is the inverse sample weight for an AFEES observation multiplied by the ratio of the population proportion enlisting to the sample proportion enlisting. For the nonenlisted sample, w_i is the inverse sample weight for an NLS observation multiplied by the ratio of the population proportion not enlisting to the sample proportion not enlisting. The inverse sample weights for the enlisted and nonenlisted samples were normalized so that they would sum to their respective sample sizes in our analysis file. Table C.1 reports the population enlistment proportions for our regression samples.

With the appropriate weights in the log likelihood function, the maximization of that function with respect to β produces consistent and asymptotically normal parameter estimates and consistent and asymptotically efficient standard errors. We use the maximum-likelihood estimation technique described by Berndt, Hall, Hall and Hausman (1974).

IV. Means for Enlisted Graduates

Variable	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Age 17	0.356	0.310	0.431	0.324	0.382
Age 18	0.315	0.327	0.296	0.321	0.311
Age 19+	0.083	0.086	0.078	0.080	0.088
AFQT	52.659	58.284	43.119	71.316	28.749
Live at home	0.702	0.688	0.725	0.714	0.709
Family income	18437	19662	16481	20875	15255
No. siblings	3.842	3.729	4.027	3.424	4.406
Expect more ed.	0.621	1.000	0.000	0.742	0.484
Mother's ed.	11.843	12.014	11.564	12.007	11.634
Some postsec. ed.	0.158	0.232	0.038	0.194	0.125
Ln mos. since sch.	2.315	2.246	2.427	2.274	2.331
Ln hourly wage	1.317	1.329	1.297	1.326	1.286
Wkly hours emp.	39.635	39.789	39.359	39.706	39.357
Ln mos. on job	1.726	1.679	1.810	1.664	1.785
Not curr. emp.	0.237	0.234	0.243	0.226	0.253
Wkly hr, not emp.	39.899	40.625	38.756	42.820	37.226
Mos. not emp.	4.954	5.050	4.804	4.784	5.223
Not emp. last yr.	0.104	0.086	0.134	0.056	0.161
Black	0.226	0.220	0.237	0.092	0.393
Hispanic	0.068	0.067	0.070	0.048	0.081
AFQT cat. IV	0.245	0.190	0.340	0.000	0.560
Share seniors	0.144	0.144	0.145	0.146	0.142
Recruiter density	0.001	0.001	0.001	0.001	0.000
GED	0.088	0.046	0.157	0.082	0.094
Low fam. income	0.096	0.069	0.140	0.045	0.157
Fam. inc. missing	0.080	0.071	0.095	0.053	0.105
AFQT missing	0.098	0.086	0.116	0.000	0.000
Mos. on job, emp.	11.462	11.205	11.922	10.886	12.128
Hourly wage	3.877	3.933	3.781	3.928	3.726
HS population	65639	67687	62279	65573	64316
AFEES population	456521	472212	430777	452102	452242
Recruiters/MEPS	229	236	217	231	222
Sample size	1419	795	477	733	564

III. Means for Nonenlisted Graduates

Variable	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Age 17	0.395	0.383	0.403	0.414	0.346
Age 18	0.352	0.291	0.394	0.319	0.377
Age 19+	0.081	0.095	0.070	0.053	0.144
AFQT	54.463	56.332	53.108	71.058	28.846
Live at home	0.706	0.700	0.710	0.701	0.731
Family income	19461	18980	19791	20842	18305
No. siblings	3.238	3.267	3.218	3.041	3.637
Expect more ed.	0.404	1.000	0.000	0.445	0.383
Mother's ed.	11.643	11.957	11.430	11.890	11.304
Some postsec. ed.	0.133	0.185	0.098	0.169	0.106
Ln mos. since sch.	2.819	2.633	2.945	2.824	2.748
Ln hourly wage	1.503	1.448	1.540	1.527	1.457
Wkly hours emp.	41.762	41.203	42.128	41.531	41.690
Ln mos. on job	2.216	2.089	2.298	2.294	2.141
Not curr. emp.	0.096	0.102	0.092	0.087	0.117
Wkly hr, not emp.	36.914	35.974	37.619	36.755	36.051
Mos. not emp.	2.835	2.716	2.924	3.185	2.172
Not emp. last yr.	0.021	0.032	0.013	0.015	0.028
Black	0.087	0.136	0.054	0.023	0.188
Hispanic	0.045	0.066	0.030	0.029	0.063
AFQT cat. IV	0.217	0.203	0.226	0.000	0.551
Share seniors	0.154	0.149	0.157	0.157	0.149
Recruiter density	0.001	0.001	0.001	0.001	0.001
GED	0.039	0.046	0.034	0.045	0.027
Low fam. income	0.117	0.135	0.105	0.091	0.141
Fam. inc. missing	0.155	0.144	0.162	0.183	0.130
AFQT missing	0.110	0.074	0.135	0.000	0.000
Mos. on job, emp.	16.838	15.421	17.768	17.728	15.620
Hourly wage	4.753	4.471	4.941	4.849	4.539
HS population	72164	75894	69637	72385	70446
AFEES population	474843	513815	448441	467917	476374
Recruiters/MEPS	247	263	236	245	246
Sample size	768	339	416	362	321

II. Means for Enlisted Seniors

Variable	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Age 17	0.386	0.386	0.386	0.433	0.353
Age 18	0.480	0.514	0.450	0.483	0.473
Age 19+	0.134	0.100	0.164	0.084	0.174
AFQT	48.766	57.434	41.077	70.652	29.203
Live at home	0.919	0.904	0.932	0.925	0.916
Family income	17261	19551	15227	19745	14855
No. siblings	3.841	3.484	4.156	3.526	4.085
Expect more ed.	0.469	1.000	0.000	0.626	0.331
Mother's ed.	11.894	12.255	11.575	12.294	11.561
Ln hourly wage	1.125	1.141	1.108	1.119	1.125
Wkly hours, emp.	28.066	28.170	27.943	27.289	28.740
Ln mos. on job	1.822	1.928	1.696	1.780	1.866
Not curr. emp.	0.200	0.178	0.220	0.177	0.221
Wkly hrs, not emp.	31.935	31.848	31.997	29.566	32.263
Mos. not emp.	6.919	6.514	7.208	6.374	7.350
Not emp. last yr.	0.222	0.153	0.282	0.148	0.267
Black	0.242	0.178	0.299	0.084	0.375
Hispanic	0.074	0.070	0.078	0.048	0.102
AFQT cat. IV	0.275	0.167	0.370	0.000	0.520
Share seniors	0.148	0.148	0.147	0.151	0.145
Recuiter density	0.001	0.001	0.001	0.001	0.001
Wage < $2.25/hr	0.030	0.026	0.035	0.024	0.031
Low fam. income	0.112	0.059	0.158	0.049	0.155
Fam. inc. missing	0.150	0.133	0.164	0.080	0.195
AFQT missing	0.092	0.090	0.094	0.000	0.000
Mos. on job, emp.	10.900	12.165	9.397	10.400	11.593
Hourly wage	3.151	3.208	3.092	3.112	3.162
HS population	65897	65010	66681	63977	66403
AFEES population	451066	443570	457688	430548	459335
Recruiters/MEPS	230	227	233	223	233
Sample size	1336	604	631	610	615

Appendix B

MEANS FOR SENIORS AND GRADUATES BY ENLISTMENT STATUS

I. Means for Nonenlisted Seniors

Variable	All	Expect More Education		AFQT Group	
		Yes	No	Upper	Lower
Age 17	0.529	0.576	0.449	0.578	0.475
Age 18	0.418	0.377	0.487	0.414	0.430
Age 19+	0.053	0.047	0.063	0.008	0.095
AFQT	54.967	62.016	43.596	73.201	28.344
Live at home	0.949	0.951	0.946	0.970	0.933
Family income	24681	26942	20827	27145	21457
No. siblings	3.074	2.846	3.460	2.754	3.599
Expect more ed.	0.629	1.000	0.000	0.736	0.443
Mother's ed.	12.054	12.629	11.082	12.523	11.332
Ln hourly wage	1.130	1.130	1.130	1.146	1.093
Wkly hours, emp.	22.261	20.197	25.147	21.347	23.512
Ln mos. on job	2.107	2.126	2.081	2.108	2.067
Not curr. emp.	0.281	0.309	0.233	0.259	0.296
Wkly hrs, not emp.	30.263	26.901	37.818	28.757	31.291
Mos. not emp.	4.916	5.203	4.271	5.404	4.122
Not emp. last yr.	0.117	0.133	0.090	0.073	0.182
Black	0.116	0.123	0.104	0.039	0.221
Hispanic	0.049	0.061	0.028	0.039	0.067
AFQT cat. IV	0.245	0.135	0.423	0.000	0.603
Share seniors	0.151	0.150	0.153	0.153	0.149
Recuiter density	0.001	0.001	0.001	0.001	0.001
Wage < $2.25/hr	0.109	0.097	0.130	0.089	0.150
Low fam. income	0.038	0.031	0.051	0.021	0.062
Fam. inc. missing	0.174	0.174	0.174	0.150	0.174
AFQT missing	0.067	0.084	0.038	0.000	0.000
Mos. on job, emp.	14.467	12.989	16.533	14.348	14.692
Hourly wage	3.228	3.195	3.282	3.281	3.106
HS population	68177	68696	67298	65319	74453
AFEES population	456326	464178	443020	432998	501916
Recruiters/MEPS	235	237	231	224	256
Sample size	448	277	170	200	219

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20. ABSTRACT (Continue on reverse side if necessary and identify by block number)

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This study analyzes factors in the enlistment decisions of two segments of the recruiting market: high school seniors, and nonstudent high school graduates. It draws on data from the 1979 Department of Defense [Survey of Personnel Entering Military Service] and from the 1979 wave of the [National Longitudinal Survey of Labor Force Behavior, Youth Survey]. The authors base their empirical analysis on hypotheses derived from the theories of investment in human capital and career choice, and on the theory of recruiter behavior. They find that seniors and graduates differ substantially in the empirical determinants of their enlistment decisions; education expectations play a major role in enlistment behavior; and a graduate's enlistment probability is much less in areas with a fairly high proportion of seniors and recent graduates, whereas a senior's enlistment probability is unaffected.

Keywords

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